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# SOUND & VISION

HOME THEATER • AUDIO • VIDEO

MULTIMEDIA • MOVIES • MUSIC

## SUPER GEAR

First DVD Camcorder

Samsung's Bargain  
DVD Player

Pioneer Widescreen HDTV

Nakamichi's Sexy Stereo

Energy's Space-Saving  
Speaker System

**Home Theater Rumble**  
**8 Subwoofers**  
Reviewed

**Video's Future Revealed**  
**Runco & Hitachi**  
**DLP Projectors**



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TX-DS787

model

## INTRODUCING THE ONKYO TX-DS787: THE FIRST THX® SELECT CERTIFIED 6.1 CHANNEL HOME THEATER RECEIVER WITH THX SURROUND EX™.

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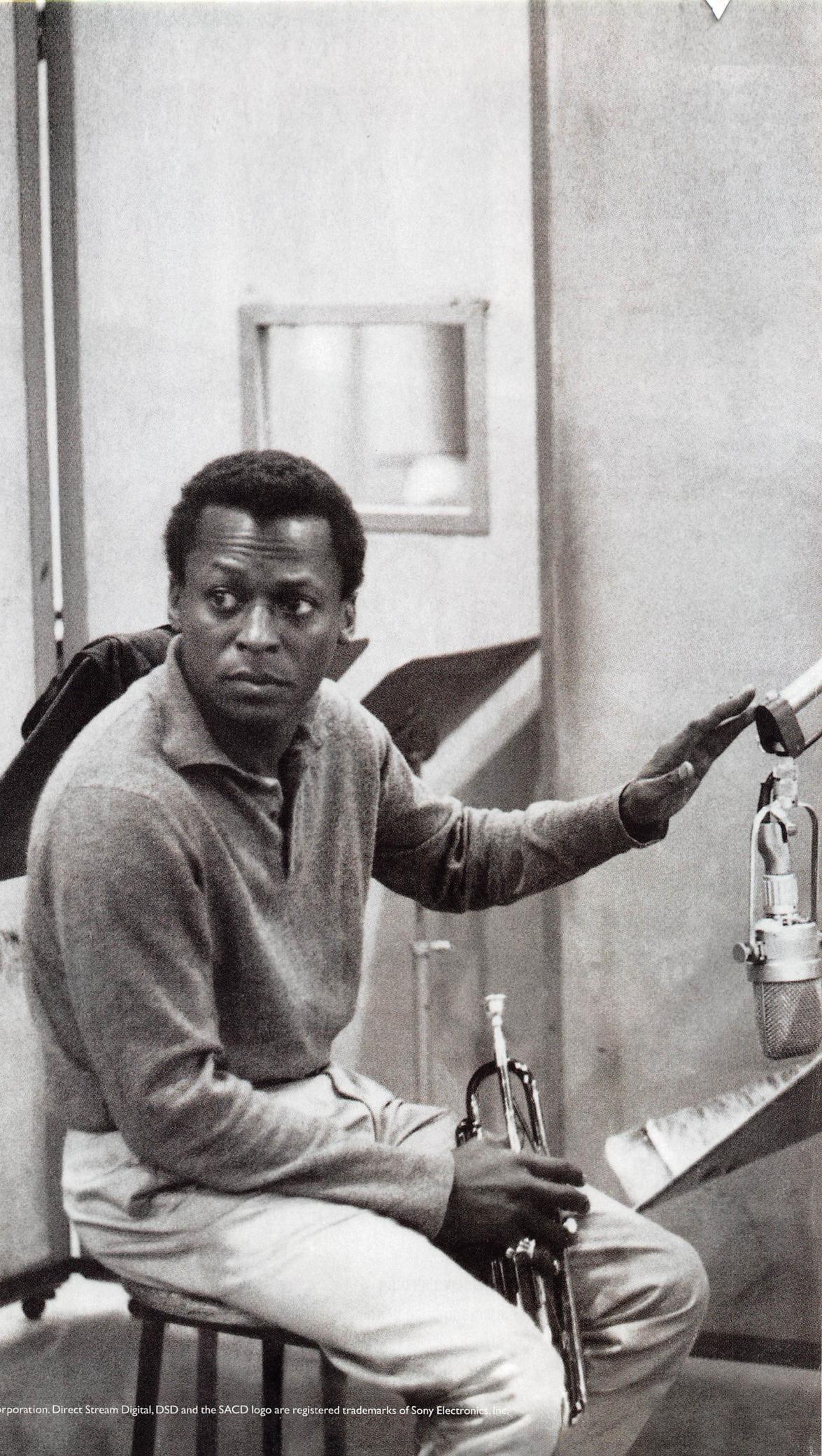
- 7.1 External Inputs/Outputs – uncompromised connectivity to an additional external 7.1 channel or 5.1 channel decoder for both current and future DVD/Audio formats
- 12 Volts DC Trigger – to turn other amps on/off, lower/raise a projection screen, etc.





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happened.

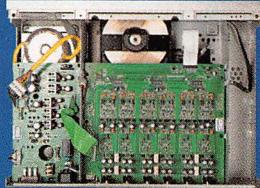


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**Disc 2 Special Features**

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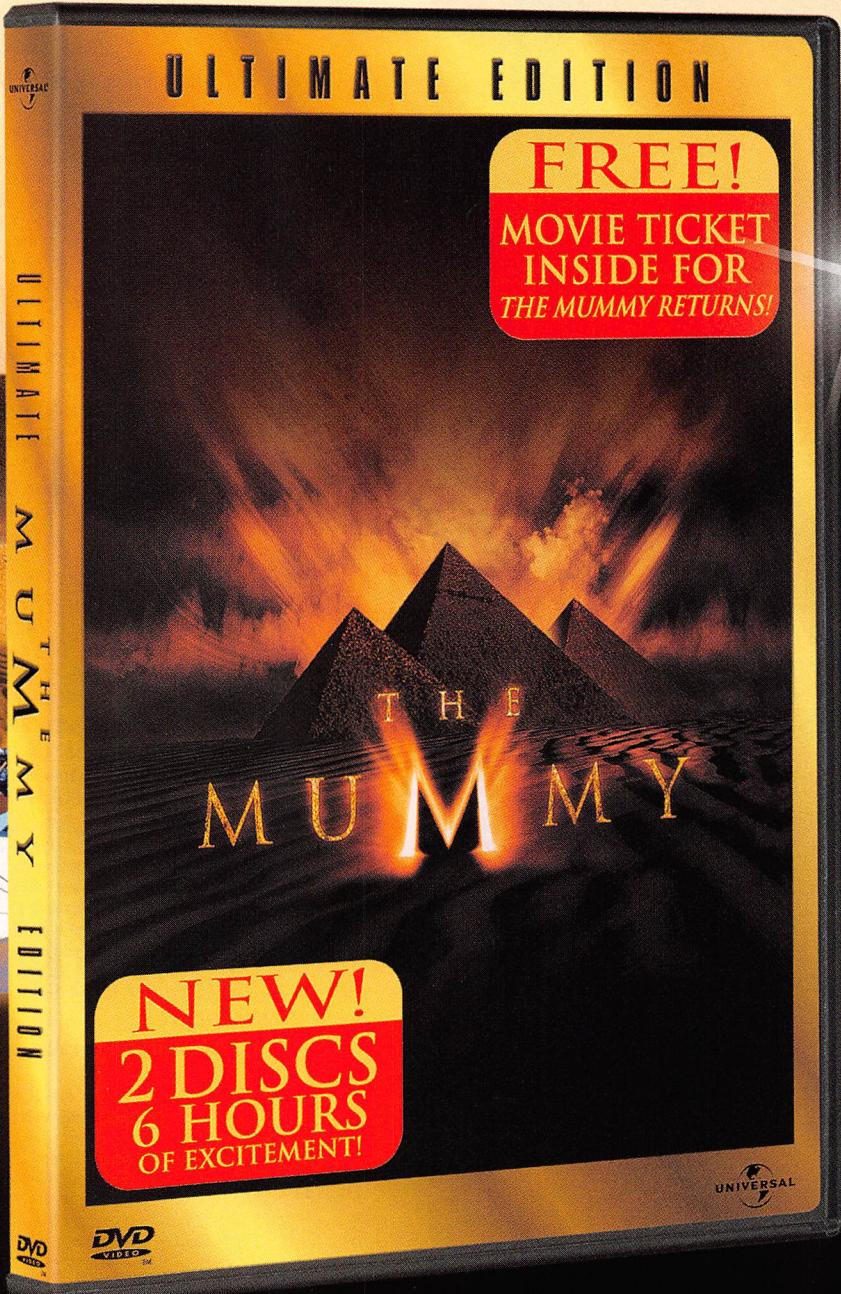
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# So What Do You Think?

Please take a few minutes to fill out and send in this reader survey.



**O**ne of the things I like most about being the editor is having first crack at the mail. Every month hundreds of you write or e-mail on a variety of topics, ranging from what you did or didn't like about a particular issue to what's right or wrong with a particular product or technology. A good many messages and letters pose very specific questions, often about how to hook up or troubleshoot one of your components. Technical questions that may be of wider interest are forwarded to Ian Masters, who responds to as many as he can in his "Q&A" column, while we try to address questions about components we've actually reviewed in our "Feedback" section.

Of course, every now and then we get readers who go overboard — like the guy who e-mailed a list of 28 very specific questions! Our quick reply: "Please read the magazine for a while, *then* write us!" Finally, many of you just want a little advice on which brand or model to buy. Unfortunately, these questions are among the most difficult to answer because 1) it's impossible for us to review every product in a given category, and 2) it often

comes down to a matter of personal preference. There's never enough time or space to respond to every letter individually, but I can assure you that no reader mail goes unread — every message or letter is seen by at least one of our editors, and often more than one.

All of this brings me to the brief survey below. We'd appreciate your taking a few minutes to fill it out and send it to us. Just copy (or tear out) this page, write in your answers/comments, and mail it to Sound & Vision Survey, 1633 Broadway, New York, NY 10019. You can also e-mail to [soundandvisionmag@hfmmag.com](mailto:soundandvisionmag@hfmmag.com) — just be sure to key your answers to the numbers of the questions as they appear on this page.

Thanks in advance for your help. Your feedback will help us plan future issues. In the meantime, we hope you enjoy this one!

Bob Ankosko, Editor in Chief

## Sound & Vision Reader Survey

**1. What is the most exciting new technology (or product) you've encountered in the past year or so?** \_\_\_\_\_

2) \_\_\_\_\_

3) \_\_\_\_\_

**2. Do you plan to buy a high-definition TV or HDTV monitor (needing an outboard high-def tuner/decoder) in the next year? Yes  No**

6b. What are your top three favorite CDs?

1) \_\_\_\_\_

2) \_\_\_\_\_

3) \_\_\_\_\_

**2a. Why/why not?** \_\_\_\_\_

7a. Do you buy DVDs online? Yes  No

**3. Do you plan to buy a multichannel DVD-Audio or SACD player in the next year? Yes  No**

7b. Do you buy CDs online? Yes  No

**3a. If "Yes," which format, and why?** \_\_\_\_\_

**4. Do you use your computer to listen to music or watch movies? Yes  No**

8. Does your home entertainment system have multiroom audio or A/V capabilities? Yes  No

**4a. If "Yes," is it movies?  music?  both?**

8a. If "no," are you interested in (check one):

installing a multiroom system yourself?

having a multiroom system professionally installed?

**5. Do you own a device that plays MP3 files or other compressed music formats? Yes  No**

9. In general, what is your favorite part of this magazine, and why? \_\_\_\_\_

**5a. Why/why not?** \_\_\_\_\_

**5b. If "No," do you plan on buying one in the next year? Yes  No**

10. What is your least favorite part of this magazine, and why? \_\_\_\_\_

**6a. What are your top three favorite DVDs?** \_\_\_\_\_

**11. Which is your favorite test report in this issue, and why?** \_\_\_\_\_

**12. Which is your favorite feature article in this issue and why?** \_\_\_\_\_

# Definitive's Bipolar



# “Fantastic... Superspeakers!”

*-Brent Butterworth, Home Theater Magazine*

“Startlingly real... bipolar speakers are amazing”

*-Shane Buettner, Widescreen Review Magazine*

*Our premier BP3000TL, BP2000TL, BP2002TL, BP2004TL and BP2006TL superspeakers and complete matching surround systems all combine our revolutionary bipolar technology with awesome built-in powered subwoofers for ultimate music and home theater!*



“These speakers are amazing... my universe was shaken”

*-Jeff Cherun, Home Theater Magazine*

If you're looking for the finest sounding music and home theater speakers available, visit your nearest Definitive dealer today and listen to our critically acclaimed, award-winning Bipolar Power Towers and complete timbre-matched home theater systems. You'll agree with the world's top reviewers that Definitives are clearly your #1 choice for the ultimate listening experience.

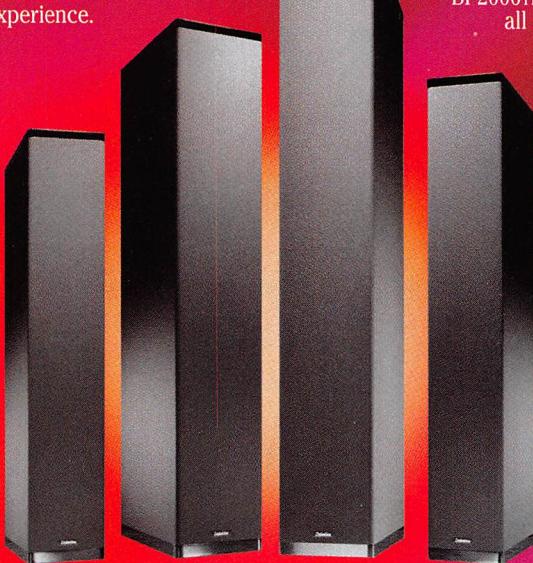
“The grandeur filled the room”

*-Rich Warren, Sound & Vision*

Experts agree that bipolar loudspeakers are sonically superior to all others for both music and home theater. In fact, top expert Brent Butterworth wrote, “Bipolar systems are as close as we've come to finding the Holy Grail of home theater.”

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“They are a home theater steal and a music lover's find”

*-Fred Manteghian, Stereophile Guide to Home Theater*

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“This slammin' system will probably kill any others you've heard”

*-Brent Butterworth, Home Theater*

In addition to their totally unsurpassed sonic performance, all 8 Definitive bipolar towers (from the \$299 BP6B to the top-of-the-line BP3000TL) also deliver absolutely unequalled value. And when you combine them with our perfectly timbre-matched center channels and surrounds, you will have a breathtaking home theater system which, to quote *Video Magazine*, “will make you literally feel like you're part of the movie.” You must experience these Grand Prix Award-winning superspeakers today!

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JUNE 2001

# SOUND & VISION™

WHERE TECHNOLOGY BECOMES ENTERTAINMENT™

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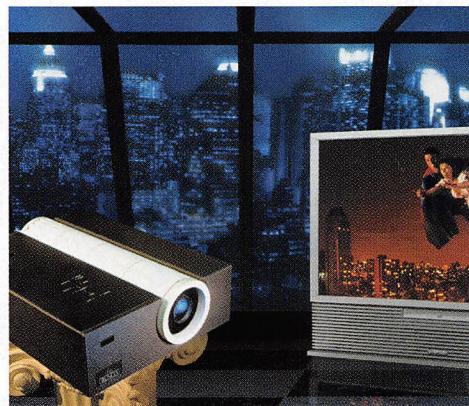
Hitachi 53-inch DLP rear projection set (see p. 84), Hitachi DVD-RAM camcorder (p. 55), Samsung DVD player (p. 48), Harman Kardon receiver (p. 51), and Cambridge SoundWorks speakers (p. 65). Photo illustration by Jayme Thornton.

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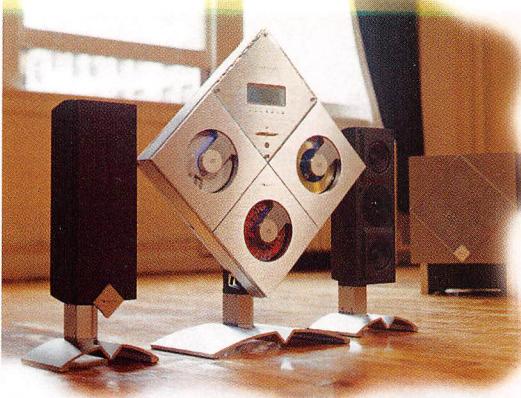
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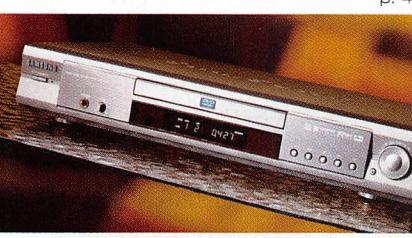
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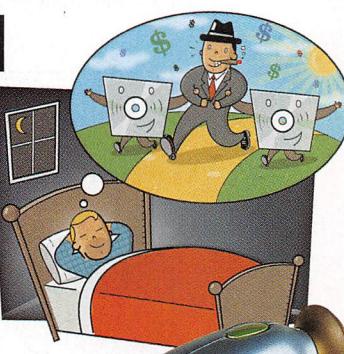
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# randomplay

EDITED BY BRIAN C. FENTON



## And the Winner Is...

The show must go on — but not for hours and hours, right? That's why Gil Cates, veteran producer of the annual Academy Awards telecast, dangled a digital incentive this

year — a \$2,500, 43-inch Toshiba high-definition TV set — to the Oscar winner who gave the shortest acceptance speech. Fittingly, Michael Dudok de Wit, who won an Oscar for his 8-minute

animated short film, *Father and Daughter*, took home the TV, clocking in with an 18-second thank you. Julia Roberts, who won Best Actress honors, was apparently not even trying to win it. Her speech, in which she giggled, "I have a television," was the longest of the night at almost 4 minutes. Even so, the broadcast came in at 43 minutes less than last year's 4-hour, 8-minute marathon.

— Jamie Sorcher

## Get Your Digits Out

Thinking about adding a DVD-Audio player to your home entertainment system? Be sure you stop to pick up some cables first. In most cases, you'll need six RCA-type audio cables to connect the player to your receiver and

subwoofer — there are no multichannel digital audio outputs on DVD-Audio players. Add three more RCA cables if you plan to use the player's component-video output. Add yet another (that makes *ten!*) if you want to use the player's coaxial output for listening to CDs. There's gotta be a better way, right?

Well, some players use a single-cable DB-25 connection for the multichannel analog audio, but that still leaves five cables. Fortunately, the DVD Forum industry group is set to release a specification for an IEEE 1394-based digital output for DVD players that would pass *all* A/V data over a *single* cable. The only thing holding up the long-overdue one-wire solution is — surprise! — the copy-protection scheme, which both Hollywood and the record labels have yet to approve.

STEVE BOHANNAN



## You Won't Know Who's Who Without a Multichannel Audio Format Scorecard

With the introduction of DVD-Audio and Super Audio CD (SACD), keeping track of which format will play on what has become a chore. And it doesn't help that the formats are being bunched together in the few music-store displays that exist. Here's a handy chart you can clip out and tack to your bulletin board or tape on your refrigerator or player to help ensure you buy the right discs for your machine.

	DVD-Video	DVD-Audio	DTS CD	Multichannel SACD
Plays on a CD player	No way	Not in a million years	Yes, but ... <sup>1</sup>	Maybe <sup>2</sup>
Plays on a DVD-Video player	Duh	Probably, but ... <sup>3</sup>	Yes, but ... <sup>4</sup>	When hell freezes over <sup>5</sup>
High-resolution audio	No, compressed <sup>6</sup>	Yes	No, compressed too	Yes
Number of titles available <sup>7</sup>	300-plus <sup>8</sup>	40	114	14
Number of titles available from artists you've actually heard of <sup>9</sup>	100-plus	20	42	2
Number of titles available from artists who've had a hit within the last 20 years	50-plus	5	17	0

<sup>1</sup> You'll need a digital output on your CD player and a DTS decoder in your preamp or receiver.

<sup>2</sup> You can play *hybrid* multichannel SACDs on a CD player, but you'll only get two-channel playback without the benefit of Super Audio's higher resolution.

<sup>3</sup> The DVD-Audio standard is so wide open, it's up to the labels what kind of compatibility they want their discs to have. Practically every DVD-Audio disc we've come across, though, gives you a 5.1-channel Dolby Digital version of the DVD-Audio mix — except the ones from DTS (yes, DTS does DVD-Audio discs, too), which give you a 5.1-channel DTS version and a two-channel Dolby

Digital version along with the DVD-Audio mix.

<sup>4</sup> You'll need a DTS decoder in either your player, preamp/processor, or receiver.

<sup>5</sup> Or when "universal" players appear, whichever comes first. (SACDs *will* play on multichannel SACD/DVD-Video players, but *not* on regular DVD-Video or DVD-Audio/Video players. Got that?)

<sup>6</sup> Except for two-channel, 96-kHz/24-bit discs, that is.

<sup>7</sup> As of 4/11/01.

<sup>8</sup> Includes two-channel 96-kHz/24-bit audio-only discs.

<sup>9</sup> Includes Barry Manilow and Yanni.

## Who Says DTVs Cost Too Much?

The broadcasting, cable, and consumer-electronics industries have been blaming each other for the relatively slow sales of digital TV sets, particularly high-definition models. But flipping through the Sunday papers in early April, we found out who *doesn't* deserve the blame.

The colorful advertising inserts induced sticker-shock — *reverse* sticker-shock. How about a 32-inch HDTV monitor for \$1,600? (The Circuit City ad didn't mention that you'll need an outboard tuner to receive any digital programming — but that's another story.) Two high-def monitors available from Best Buy also came in under \$2,000. Between the two chains, six sets were priced at less than \$3,000.

We're not saying these sets

## 15 Minutes with Doyle Bramhall II

are cheap. But compared with prices just a year ago, HDTV set makers have made some real progress. Broadcasters, except for CBS, have made negative progress — there are fewer high-def shows on the air now than at this time last year. And the cable industry? No progress at all.

### Napster-Proof CDs?

Many people think the recent legal actions against Napster won't stem the flow of online music trading, which helps explain why Music City Records was planning to release the first noncopyable, nonriippable CD in the U.S. in mid-April. (Last summer in Germany, BMG released a copy-protected CD but was forced to recall it after it proved incompatible with some players.)

The new disc, Charley Pride's *A Tribute to Jim Reeves*, contains purposely altered error-correction codes that are said to make it unplayable in CD-ROM drives. Problem is, those codes will also likely prevent it from playing on some existing CD players. SunnComm, the company supplying the copy-protection technology, says it will be impossible to create a bit-perfect copy of the disc on most stand-alone CD recorders, though analog copies should sound just fine.

### Spectrum Squeeze

Broadcasters call it the DTV transition, but some in Congress call it "the great spectrum giveaway" because the government has handed every TV broadcaster a second, digital channel for free. It's actually more like a "great spectrum loan," because the FCC's plan calls for broadcasters to give back their analog channels in 2006 — but only if 85% of U.S. households have a DTV. Everyone now realizes that deadline is wildly optimistic, making it

*Being tagged a Texas guitar prodigy isn't exactly the easiest mantle to uphold — just ask Doyle Bramhall II, who grew up under the tutelage of the legendary Stevie Ray Vaughan. Bramhall was expected to fill the void left in the wake of SRV's tragic death in a helicopter crash in 1990, but the fiery southpaw threw a curveball and focused on cultivating his songwriting instead. After stints in ARC Angels and the Fabulous Thunderbirds and two uneven solo albums, Bramhall formed Smokestack and cut a powerful wake-up call, *Welcome* (RCA), that announces the perfect marriage of adept songwriting ("So You Want It to Rain") and feisty guitar work ("Thin Dream"). In California on a brief respite from his ongoing gig as Eric Clapton's opening act, Bramhall, 32, took some time to relish his new beginning. "I see myself as a career artist," he mused, "and my career's just starting." Welcome to the big leagues.*

— Mike Mettler

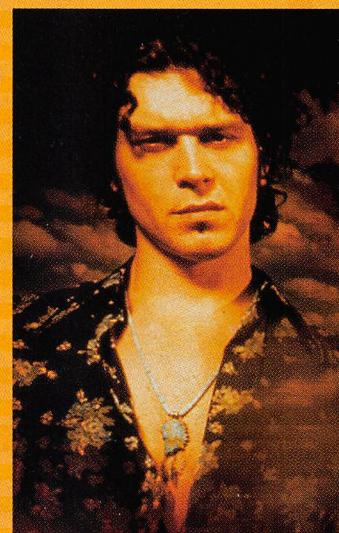
### I understand Eric Clapton sought you out as a collaborator. How did that come about?

My manager had gotten a copy of *Jellycream* [Bramhall's 1999 album] to him when he was in Japan, and he called me from there while I was on tour with Roger Waters. He said that other than D'Angelo, I was his favorite contemporary artist of the last five years, and he wanted to get together with me and do some songs for a record he was doing with B.B. King [last year's triumphant *Riding with the King*]. And the rest, as they say, is history.

**You're also all over Clapton's latest album, *Reptile*, and you co-wrote the rockinest song on there, "Superman Inside."**

likely that broadcasters will be hanging on to both channels for quite a few years to come.

Because the analog channels would fetch billions of dollars in revenue if they were auctioned off to anxious telecommunications companies, Congress has been looking for a way to do away with the 85% rule. And scientists at the Los Alamos National Laboratory have come up with a potential solution — though one that's prob-



ably too little, too late because it would require rewriting the entire HDTV standard. They have developed a new transmission and compression algorithm that packs widescreen HDTV and letterboxed analog signals into a single channel, which would allow broadcasters to return the second channel. The scheme, seen as an interim transition to full digital TV, squeezes digital information into nonpicture and letterbox portions of

Yeah. It was a great opportunity. It's good to be validated by an artist who's as high up in the music world as Eric. I'd say that *Welcome* certainly validates your talents. It gives off the vibe of a late-'60s/early-'70s album in a contemporary setting.

That's the key. I've always wanted to make records that sound like they're pre-1975. Records made back then sounded really alive. You usually didn't get a second or third chance at it.

**In the liner notes, you say proudly that you didn't use the Pro Tools digital audio production system while making *Welcome*.**

I think people get really lazy with Pro Tools. It's so convenient; I've even used it on some of my demos. With it, you know that if you do five or six vocal tracks — or even

one, for that matter — you can fix the pitch and everything else later.

### What's your take on music downloading?

I think there are a lot of songwriters out there whose income comes mainly from writing and publishing, and anything that's going to take money from their pockets is not a good thing. Look at an artist like Paul Pena, a blind musician who just released his first album in almost 30 years [*New Train on Hybrid*]. It's likely that the only way he's getting by is because of a royalty check for something he wrote. [Pena's "Jet Airliner" was made famous in the late '70s by Steve Miller.] If people are downloading his music for free, all the years he spent on making his records and writing the songs would be for nothing. You'd hope that at some point, people would want a hard copy of the records they're downloading. I know I would.

analog signals. The compressed signals contain 80% of the detail of an uncompressed HDTV transmission.

### Deep Blue on a Chip

Ready for a videogame system that's smarter than you? IBM, Sony, and Toshiba are jointly developing a supercomputer-on-a-chip that could result in consumer devices more powerful than IBM's chess-playing supercomputer, Deep Blue. The new chips, which

# Pundits to Record Stores: Drop Dead

Well, that's not exactly what they said. But it's certainly what it sounded like to many of the store owners who made their way to Orlando for the annual convention of the National Association of Recording Merchandisers (NARM).

At a panel discussion called "Digital Music Super Session: Research Analysts' Perspectives," analyst after analyst urged brick-and-mortar storekeepers to go brick-and-click ASAP. "The album as we know it is in the process of dying," said Aram Sinnreich of Jupiter Media Metrix. Joan Fitzgerald of Arbitron Internet concurred: "Music isn't a product anymore. It's a service." But when she suggested that one way for retailers to adapt might be by compiling

custom CDs for their shoppers, she was met with cat-calls from the audience.

Arthur Jannakas, owner of the Boston chain CD Spins, was one of those in the audience who talked back. In pre-Napster days, he opened three new locations, bringing his total to five. Now he's a bit scared. "There's nothing that's been said here today that helps us," he told the panel. "I talk to my customers. The more they download music, the more they don't buy CDs."

DVD-Audio made a big splash at NARM. Trouble was, it was difficult for many conventioneers to find the "pool," since the listening room — sponsored

by the DVD Entertainment Group — was nearly hidden in a remote corner. Ah, location, location . . . DTS was more fortunate: its multichannel-equipped tour bus was parked outside the main entrance. "Bus Tour Plugs DVD-Audio," blared a recent edition of *Billboard*. And, yes, the first DVD-A titles on the DTS label were on a table in the bus when I climbed aboard. But during the demo, only

DTS 5.1-channel CDs were auditioned — on a DVD-Video player! It's true

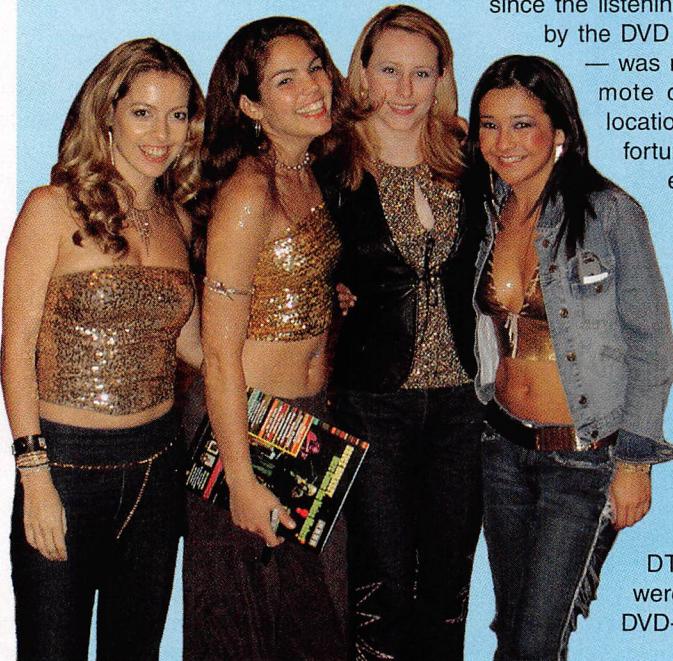


Roll up, roll up for the DTS 5.1 tour. Below, the Bond girls step right this way.

that, in Orlando, DTS touted its bus accurately with lines like "Digital DTS Surround" and "5.1 Music Demo." But the potential for confusion is hard to miss (see the "Multichannel Audio Format Scorecard" on page 16). That must be why I recently saw DTS 5.1 CDs included in a display at my local Wiz marked "DVD-Audio."

So did NARM attendees get to see any artists with new recordings to merchandise? Well, there were performances by Jessica Andrews, Sophie B. Hawkins, Rod Stewart, and Rodney Crowell, to name a few. But it's fair to say the show was shaken, stirred, and bludgeoned by Bond — four young ladies who, according to the NARM convention guide, "breathe new life into the notion of a classical string quartet." Well, sure, in the sense that skin is a living thing (not to mention cleavage). Crossover? Crossover and *out*. But, hey, you might help save the record industry if you buy Bond's *Born* (Decca). Just don't blame me when you *play* it.

— Ken Richardson



KEN RICHARDSON

will likely turn up in the successor to Sony's PlayStation 2, will be optimized for broadband networks and ideally suited to handle video, interactive gaming, speech recognition, and 3-D graphics. Code-named Cell, the processors will be rated in "teraflops" and able to link together for even greater power. (A teraflop is a trillion floating-point operations per second.) The first processor is expected to be available in four years, so start brushing up on your chess game *today*.

## Legal, Free Net Downloads?

Radio Free Virgin, a division of Virgin Records that calls itself "the pre-eminent digital radio broadcast company," has given its free streaming audio player a Record button, letting users capture streaming audio to their hard drives with better-than-MP3 quality. So is this copyright infringement *à la* Napster? Or just recording music off the radio, traditionally regarded as fair use?

The recorder, available at [radiofreevirgin.com](http://radiofreevirgin.com), lets you

keep and play the music for as long as you want, but the music is encrypted and will play only on the machine that downloaded it, so file swapping is not an issue. Plus, Virgin wants to sell CDs, which is why the player's Buy button is easier to find than its Record button.

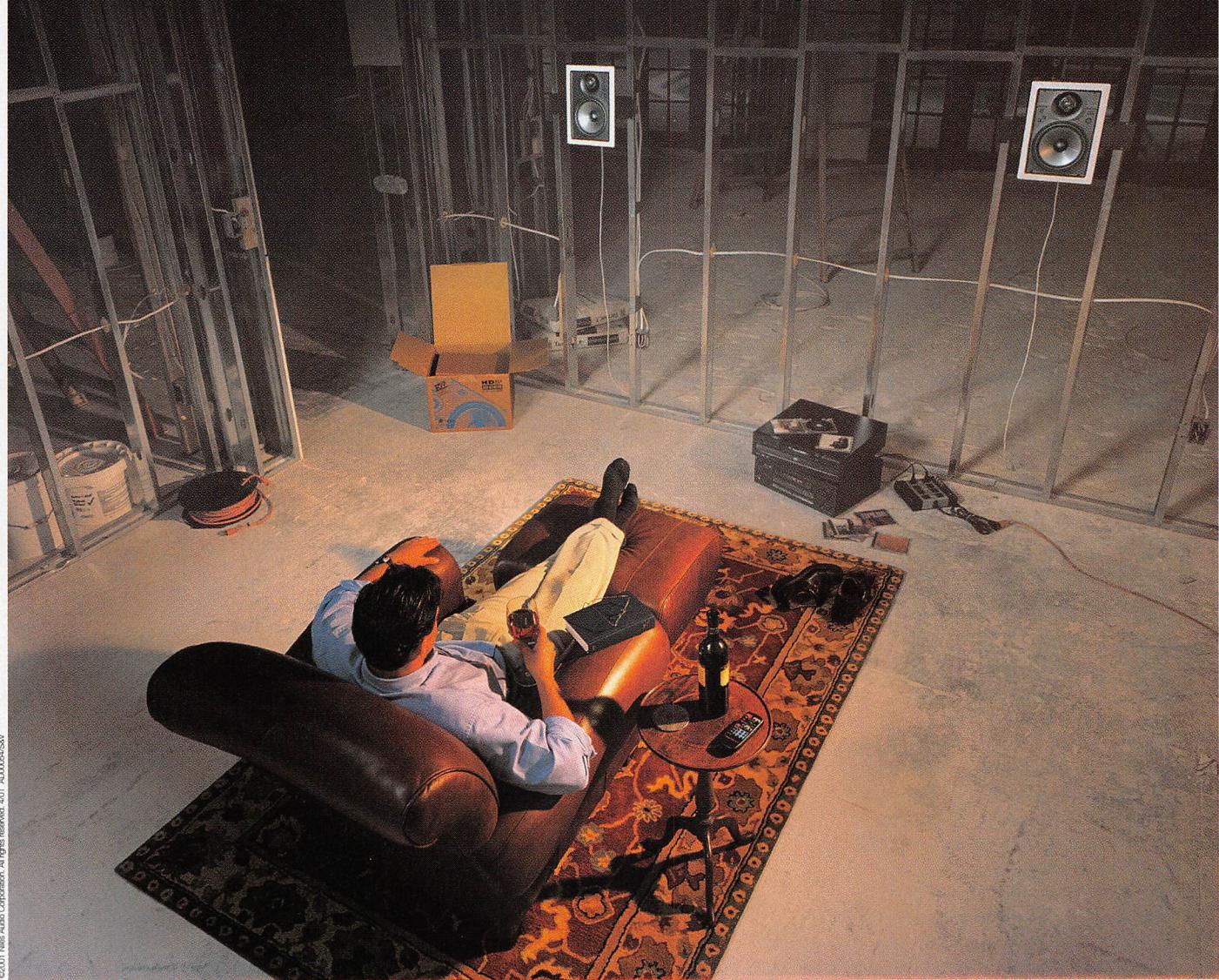
On the other hand, Virgin streams its audio under a compulsory license that differentiates between continuous streams and those where listeners know what's coming next or can

request specific musical selections. The Record button, in effect, turns the recorded audio stream into a kind of interactive music-request service. Whether it's infringement or fair use will undoubtedly be settled in court, but how would you rule?

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# feedback



## Just Like Being There

In April "Feedback," readers Steve Karsten and Ed Heath make it sound as though you hear the music in two channels when you go to a live performance. In fact, almost all of what you hear at a performance is sound that was reflected from the surfaces all around you. Only a proper multichannel mix can make a recording sound more lifelike. The word "music" is not, nor has it ever been, synonymous with two-channel stereo.

**Courtney M. Guillen**  
Somerset, NJ

## How to Sell an HDTV

As a home-electronics salesman, I have to give you guys some serious kudos for Al Griffin's "How to Buy an HDTV" (April). It answers a lot of the questions my customers have about high-definition TV. Unfortunately, I did find one error. The opening illustration shows a shopper with a copy of **Sound & Vision** in his back pocket. Here in the real world, they usually stand there shaking the latest issue of *Consumer Reports* in my face

demanding to know how many lines of resolution the TV has. After all, that *is* what makes the picture look so good, right?

**Bob Kaiser**  
Minneapolis, MN

## Listen Up

In April "Feedback," Herb Goldman admitted he doesn't "know a single person who sits in front of his stereo system and listens to music." Hi, Herb! My name is Mike, and I'd like you to know that we *do* exist.

If DVD-Audio is capable of adding another dimension to a song, then why not embrace it, or at the very least, give it a listen? It may not interest you right now, but don't dismiss the format before you give it a fair shake.

**Mike DeLara**  
Joliet, IL

Herb Goldman says he doesn't know a single person who simply sits and listens to music anymore. That's all the more reason why he should give DVD-Audio a try. I've been crazy about music since I was 8 years old, but when I switched from LPs to CDs in the mid 1980s,

I found myself doing less and less dedicated listening. DVD-Audio has me wondering if my waning interest wasn't due to "CD fatigue syndrome." With the new format, I find I can play albums all the way through without getting tired of the music.

For anyone prepared to do some serious listening, the differences between the old and new formats are not subtle. The music is more involving with DVD-Audio, whether you're listening to the stereo or the multichannel mix. My advice to you music lovers out there is to run — don't walk — and buy a DVD-Audio player and a handful of discs. You're going to be blown away!

**Michael Barnard**  
Weston, FL

## The Bigger Picture

It was surprising to see Michael Antonoff so severely criticized for simply having the courage to state his personal opinion on the ongoing letterbox vs. full-screen controversy ("The Big Picture" in April "Feedback"). This disagreement has divided videophiles into two distinct camps, although the letter-



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box camp would have you believe that people in the full-screen camp don't even qualify as videophiles.

Unfortunately, the transition from movie screen to TV screen is accomplished fairly well on some sets, but poorly to completely unacceptably on others. Those who don't find watching a letterbox version of a movie on a small screen acceptable are only asking that the DVD format fulfill its promise of including both letterbox and full-screen versions on the disc.

My personal preference is to watch most movies in their original aspect ratios. I am occasionally split on the 2.35:1 ratios, because sometimes the resolution and clarity are not up to the quality I expect from a DVD. It's personal preference, plain and simple.

**Joseph Ellington**  
Springfield, OR

### Multichannel Conspiracy

A better name for your magazine would be *Surround Sound & DVD Vision*. All you ever review anymore are six-piece speaker systems, surround sound receivers, and DVD players. What's wrong with stereo and VHS? Many people don't want to buy a multichannel system. Could this be a conspiracy by the A/V manufacturers to sell six speakers instead of two?

**G. Thompson**  
Denver, CO

Most people do want multichannel gear and

program material, but because almost everybody still listens to music in two channels, our speaker reviews discuss stereo performance as well.

### Jammer Clamor

I want the Chatter Jammer ("Off the Air," April). I've been looking for something like this for three years now, and I knew it had to hit the market sooner or later. Can you tell me who manufactures it or where I can find it? I thought the Jammer might be a trumped-up idea, but the Eggcoustical Mates are real, so I figured this must be, too.

**Jack Zamor**  
via e-mail

I found your review of the Chatter Jammer cell-phone blocker most intriguing. Is it on the market yet? Who is the manufacturer, and where can I get one?

**Jed Rowe**  
via e-mail

*That quite a few readers mistook Michael Antonoff's April Fool's Day creation for an actual product only shows that the idea struck a nerve. The technology does exist to jam cell-phone signals, but jammers are illegal in most countries. The Canadian government, however, is seeking public comment on whether jammers should be made legal for public spaces like concert halls, restaurants, and movie theaters, and it might not be long before the same thing happens in the U.S. In the meantime, though, you'll just have to tell all those rude*

people who feel obligated to expose you to their trivial conversations to shut the hell up.

### Toy Story

Kudos to Ken Richardson for his review (in April "Music") of *Toy Matinee*! I'm not jumping on the DVD-Audio bandwagon just yet, and the DTS mix is just too spacey to really enjoy, so I guess I'll be on the lookout for the Unitone version. Now, wouldn't it be neat if Unitone gave the same special-edition treatment to any of the great albums by the likes of Icehouse, Tangerine Dream, Pavlov's Dog, or Mott the Hoople?

**Ric Allen**  
Chester, VA

### DVD-Audio Tangles

Isn't the whole idea behind DVD-Audio to get you as close as technologically possible to the original audio masters? Well, I'm no expert, but if the *digital* material on the DVD-Audio disc is output using six *analog* jacks, how is that letting the player do its magic? This is a bloody hack-job on a tremendous technological achievement, and the greedy, money-sucking industry scum are to blame! When is the consumer going to get what he paid for?

**Dan Sohayda**  
via e-mail

Is it true that instead of running just one coaxial or optical cable from a DVD-Audio player to your receiver to hear a multichannel



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# feedback

DVD-Audio mix, you have to run *six* cables from its analog output? Is it done this way because the music industry wants to keep you from copying the music? Will future players allow for a one-cable hookup, as my receiver does not have the necessary analog inputs?

**Lew Fazio**  
**Charlotte, NC**

*Yes, it's true that you have to use the six-channel analog output, and yes, copy prevention is the reason. There is a glimmer of hope for the future, though — see "Get Your Digits Out" (page 16).*

## High-Def VCRs: Fact or Fiction?

Responding to a letter about the lack of high-definition VCRs ("Feedback," April), you said, "JVC plans to introduce a high-definition D-VHS VCR later this year." *Huh?* I had to look at the date on the cover to make sure the issue was from 2001 and not 2000! I saw JVC's high-def HM-DSR100DU D-VHS VCR at the Good Guys last fall.

D-VHS is alive and well. I'm surprised more people don't know and aren't excited about this backwards-compatible VHS high-def format!

**Rick Santangelo**  
**via e-mail**

*D-VHS doesn't necessarily mean high-definition. JVC's HM-DSR100DU is not a high-def recorder because it doesn't support the D-VHS high-def HS mode. A high-definition Panasonic D-VHS recorder is currently available (the PV-HD1000), but high-def playback requires Panasonic's TU-DST51 HDTV decoder, which has been discontinued.*

## The Right to Record

The Hollywood movie moguls won't settle for anything less than turning back the clock to the pre-Betamax days when nobody was allowed to record a TV program. If they triumph in their sinister schemes, you might never be able to record an HDTV program. And it won't help waiting for a high-def DVD version of a program because the moguls oppose that, too.

It's not worth surrendering the right to record just so we can have a wider, sharper TV picture. Maybe the greedy Hollywood moguls are secretly hoping the public will reject HDTV and SDTV. If that's the case, their wish is granted — you can take your digital TV and shove it.

**Phil Cohen**  
**Bay Harbor, FL**

*Home recording is under siege from all sides, not just on the HDTV front. The record labels*

*are experimenting with various pay-per-play formats and technologies to prevent CD copying (see "Napster-Proof CDs," page 17), most DVDs are already essentially copy-proof, and the copy-protection scheme likely to be adopted for HDTV transmissions can limit or prevent any kind of copying.*

## Correction

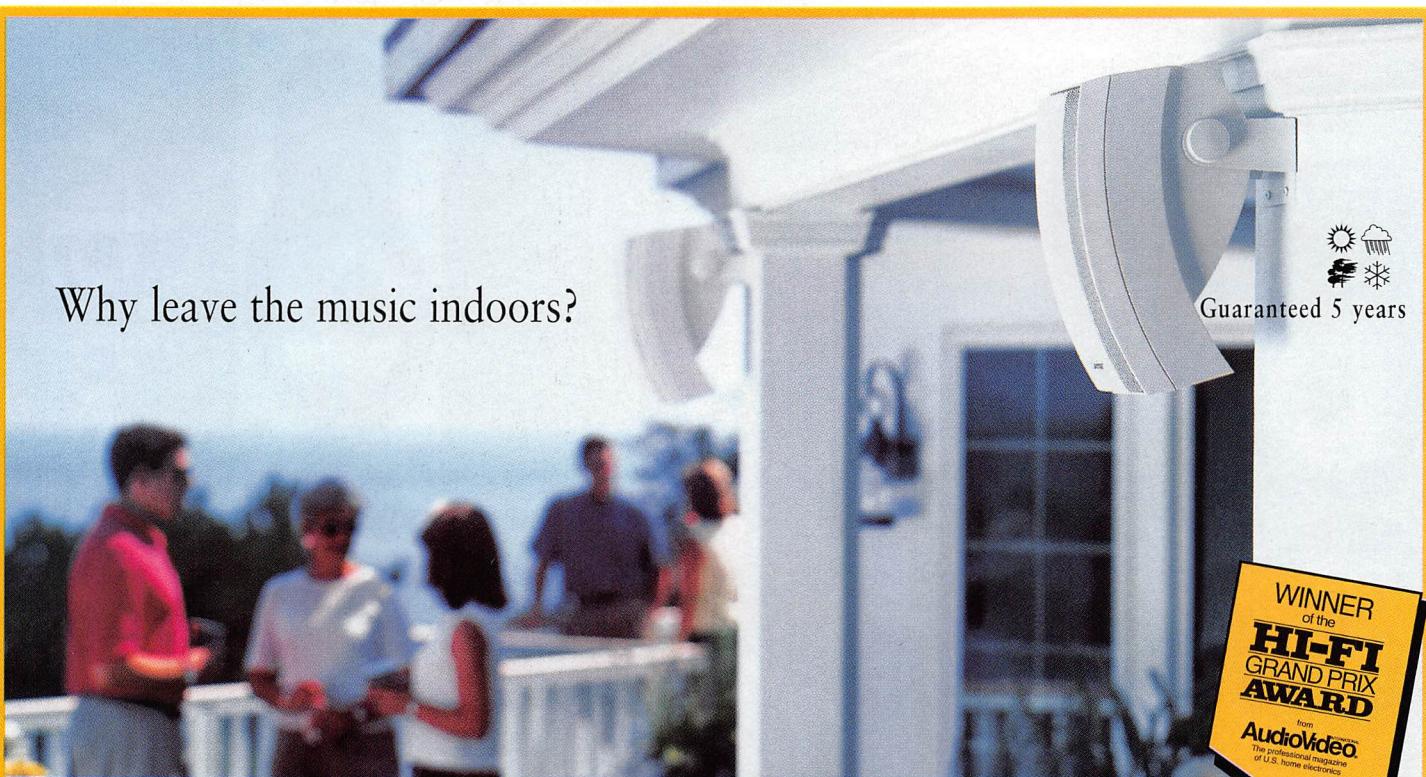
The table of HDTV tuners in April's "How to Buy an HDTV" erroneously listed the RCA DTC100/ProScan PSHD105 as having component-video output jacks. These models have VGA jacks that provide an RGB+HV signal. Also, the sidebar "Tune In, Turn On" did not mention that Thomson offers a VGA-to-component adapter (RCA VHDC300, \$129) that enables these tuners to be connected to most HDTV monitors.

**S&V**

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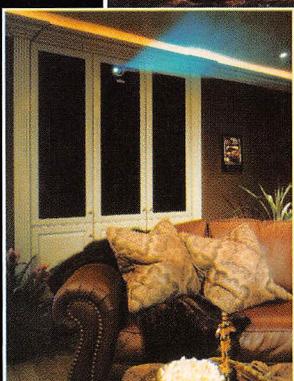
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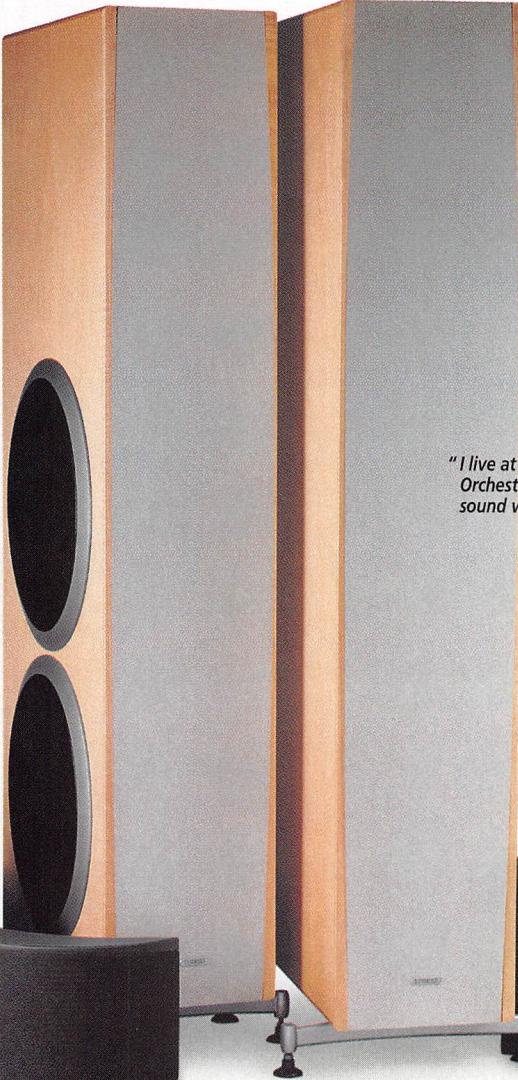
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# new products

## Hot gear from the world of home entertainment



**JVC**

Prep for the future with JVC's RX-9010VBK digital surround receiver. Rated to deliver 120 watts to each of five channels, it has such forward-looking features as a front-panel USB port and an extended frequency response, rated from 7 Hz to 50 kHz  $\pm 3$  dB, to handle the wider bandwidth of DVD-Audio. The receiver has five composite-, two component-, and five S-video inputs, one coaxial and three optical digital audio inputs, and a record loop for a CD burner. The AM/FM tuner has 45 presets, and the supplied RF universal remote can control many brands of gear. In addition, readouts from JVC components connected at the CompuLink jack — CD Text from a disc changer, for example — can be displayed on the receiver's front panel or in color on a TV screen. Price: \$550. 800-526-5308, [www.jvc.com](http://www.jvc.com)

**Martin Logan**

The Odyssey speaker brings together MartinLogan's patented electrostatic-panel technology with a pair of opposing low-frequency drivers. A 10-inch rear-firing woofer provides bass depth, while an 8-inch front-firing woofer fills in the upper bass/lower midrange. With the curved electrostatic panel providing the highs, overall frequency response is rated as 35 Hz to 22 kHz  $\pm 3$  dB, sensitivity as 90 dB. The Odyssey weighs 105 pounds and measures 13 x 67 x 27 inches. Price: \$6,000 a pair.

785-749-0133, [www.martinlogan.com](http://www.martinlogan.com)



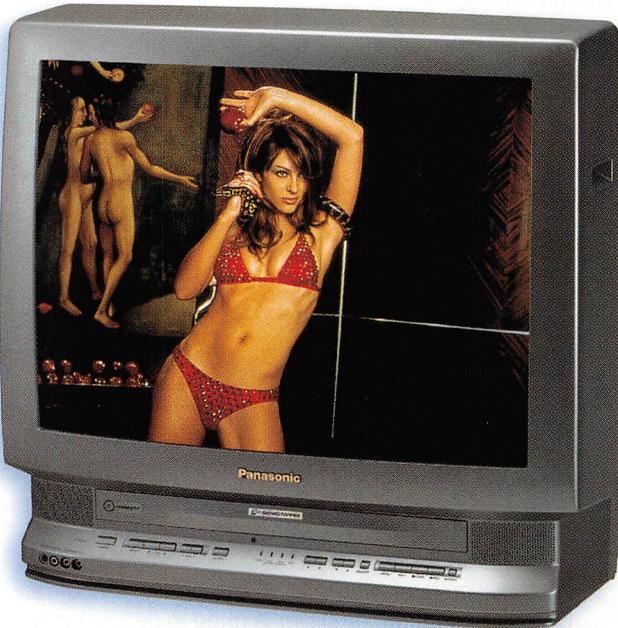
**Fisher**

Filling your room with sound is the Fisher SLIM-2000 minisystem's first job, but it can also fill that empty spot on your wall at no extra charge. Designed for vertical operation, it's just 4 3/4 inches deep. The three CD trays have independent transports and lasers, so you don't have to wait for a carousel to shuffle between discs. See-through motorized doors open and close with a touch of the supplied remote control. Other features include an AM/FM tuner with 40 presets, an alarm timer, an LCD readout, a headphone jack, and a subwoofer output. With both bass-reflex speakers — whose removable grilles come in black, blue, and "merlot" — the system measures 28 3/4 inches wide and 14 inches high. Price: \$300. 818-998-7322, [www.fisherav.com](http://www.fisherav.com)

## Panasonic

No more scrambling for a videocassette when there's a TV show you want to tape for later viewing — Panasonic's 27-inch PV-SS2710 is the first set that includes a ReplayTV hard-disk recorder. It can store up to 30 hours of programs and has all the regular ReplayTV features: the ability to pause playback of TV shows still being recorded, 7-second instant replay, and a QuickSkip button to bypass commercials. You can control both the TV and recorder via front-panel buttons or the supplied backlit remote. Price: \$900.

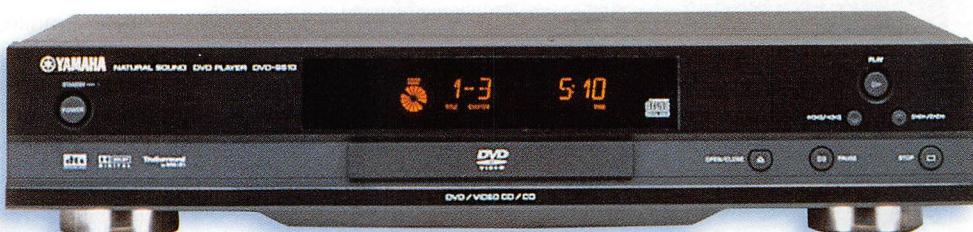
800-211-7262, [www.panasonic.com](http://www.panasonic.com)



## Kenwood

It takes up the same dashboard space as a regular car stereo DVD/CD receiver, but at the touch of a button Kenwood's Excelon KVT-9100DVD raises a 6 1/2-inch LCD that serves both as a widescreen (if small-scale) video monitor and a touchscreen control interface. (There's also a full-function remote control.) The receiver, rated to deliver 45 watts each to four channels, not only pulls in AM and FM but also includes a TV tuner. And besides DVDs, it plays CD-R (write-once) and CD-RW (rewritable) discs. All of the outputs, including a 4.5-volt preamp output, are gold plated. Price: \$2,800.

800-536-9663, [www.kenwoodusa.com](http://www.kenwoodusa.com)

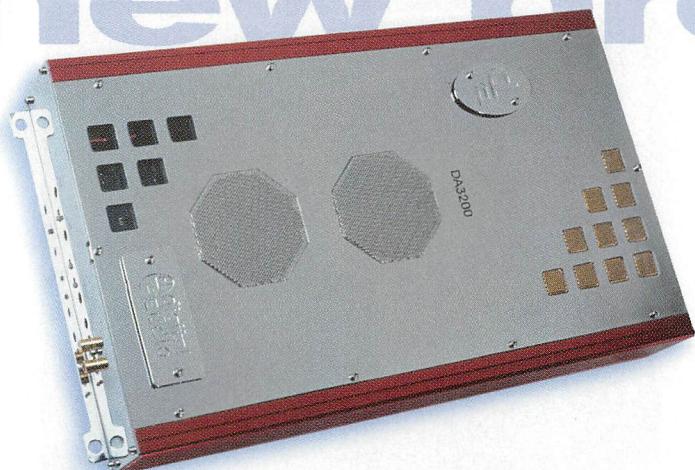


## Yamaha

It can play music from CDs, CD-Rs, and CD-RWs, but Yamaha's DVD-S510 player really wants to bring DVD movies to your TV. It has both optical and coaxial digital audio outputs as well as TruSurround virtual surround sound for playback over only two speakers. Hookup flexibility is provided by two composite-, one component-, and one S-video output. Picture zoom with magnitudes of 1.33x, 2x, and 4x can entertain you when DVD content does not, and a screen saver dims the image by 75% when the program is paused. Price: \$299. 800-492-6242, [www.yamaha.com](http://www.yamaha.com)

**NOTE** All prices and product information are supplied by the manufacturers. Dealer prices may vary.

# new products



## Digital Audio

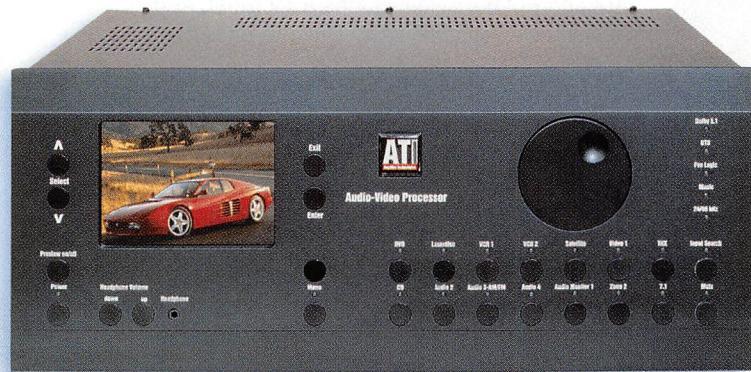
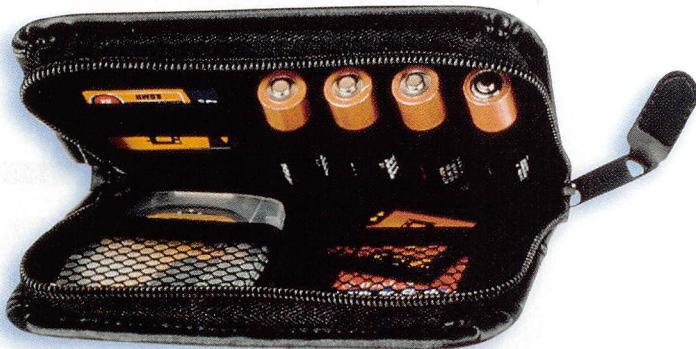
Now you're playing with power — Digital Audio's DA3200 car stereo amplifier is rated to deliver up to 300 watts per channel into 4 ohms, or 840 watts into a single 4-ohm load in bridged mode. The amp includes crossover controls, with the low-pass filter variable from 50 to 120 Hz and the high-pass from 90 to 750 Hz. There's also a bass boost (0 to 18 dB at 45 Hz), and gain is variable from 0.1 to 2 volts. The bare-wire hookup terminals are solid brass, and the 10½ x 3½ x 18-inch chassis is chrome plated. Price: \$660.

800-299-9035, [www.digitalaudioinc.com](http://www.digitalaudioinc.com)

## Case Logic

Designed to store all the accessories a digital camera needs, Case Logic's padded DMC-1 carrying case, made of simulated leather, will help you avoid those "Forgot the batteries!" moments. The 3½ x 6¼ x 1¼-inch case opens to reveal two mesh pockets and an elastic strap that can hold most digital memory cards. Four more elastic straps hold AA batteries. Price: \$9.99.

800-447-4848, [www.caselogic.com](http://www.caselogic.com)



## ATI

Truly a preamplifier for the 21st century, the AVP digital surround preamp/processor from ATI has 5.1-channel analog inputs to accommodate DVD-Audio signals and can be upgraded for 7.1-channel operation. Any video source can be displayed on the built-in color screen (!), which also shows operating menus. There are three component-, six composite-, and six S-video inputs; one component-, one S-video, and two composite-video outputs; and eight balanced XLR analog audio outputs. The 25-pound AVP can also control a second zone. Price: \$3,995. 818-343-4777, [www.ati-amp.com](http://www.ati-amp.com)

## Sonance

Generally, outdoor speakers should be heard, not seen. Enter Sonance's SoundHenge II, which looks like a boulder left by a passing glacier. The craggy camouflage is built to order around any Sonance Mariner speaker (not included with the SoundHenge II shell). Empty, it weighs 28 pounds, and dimensions are 22 x 18 x 16 inches . . . more or less.

Granite, black lava, sandstone, and Sedona red finishes help the SoundHenge II blend in nicely with your landscaping — or your living room, Flintstone. Price: \$400 each.

800-582-7777, [www.sonance.com](http://www.sonance.com)



"... the CT-120 is one of the few subwoofers I've tested at any price that could produce clean output at 20 Hz..."

**Stereo Review, June 1998**  
Tom Nousaine

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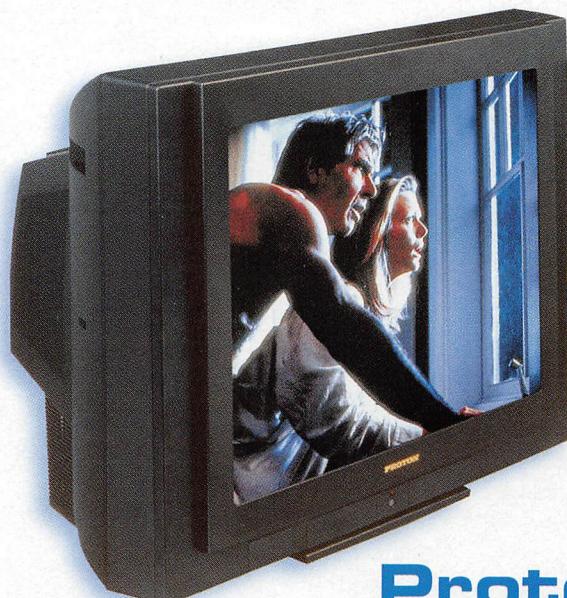
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San Jose, CA 95112  
Phone (408) 436-7270  
Web [www.velodyne.com](http://www.velodyne.com)

# new products



## Russound

Get ready for some extreme outdoor listening with the latest additions to Russound's OutBack line. These water-resistant speakers are said to be able to withstand temperatures from -50 to 200°F, while gold-plated binding posts supply rust-free connectivity. The 8 x 11 7/8 x 7-inch OB-6.1 (shown right with grille on and off) has a 6-inch polypropylene woofer, a 1-inch Mylar/titanium tweeter, and a rated frequency response of 55 Hz to 20 kHz ±3 dB. The OB-5.1 (second from left and front) and OB-4.1 (left, grille off) have smaller drivers. All come with swivel-mounting brackets. Prices per pair: OB-6.1, \$399; OB-5.1, \$299; OB-4.1, \$199. 603-659-5170, [www.russound.com](http://www.russound.com)



## Proton

A flat screen and 650 lines of horizontal resolution — not bad for a 32-inch analog TV, and Proton's HT-34PRO throws in biamplified stereo speakers, a subwoofer, an autoprogrammable 181-channel tuner, and a clock/timer. Composite- and S-video inputs are on the front for easy hookup of a camcorder or game console, while two composite-, one component-, and two S-video inputs are around back. Select between two color-temperature settings, 6,500 K and 9,300 K. Defeatable scan-velocity modulation and a channel-block function give even more flexibility. Price: \$1,600. 562-404-2222, [www.proton-usa.com](http://www.proton-usa.com)

## CMC

Leaping into the flood of portable digital music players is the Jumper II from Taiwan's CMC Magnetics. It weighs less than 2 ounces and has 32 megabytes (MB) of built-in flash memory, which can be augmented with a removable 96-MB MultiMediaCard (not supplied). MP3 files are transferred via the USB port, and file-management software is supplied on a CD-ROM. The 2 x 1 1/2 x 5 5/8-inch player has a built-in microphone so it can also function as a voice recorder. A single AAA battery is said to keep the Jumper II going for up to 8 hours. Price: \$149. 925-829-5311, [cmc.taiwanet.com](http://cmc.taiwanet.com)



## Visteon

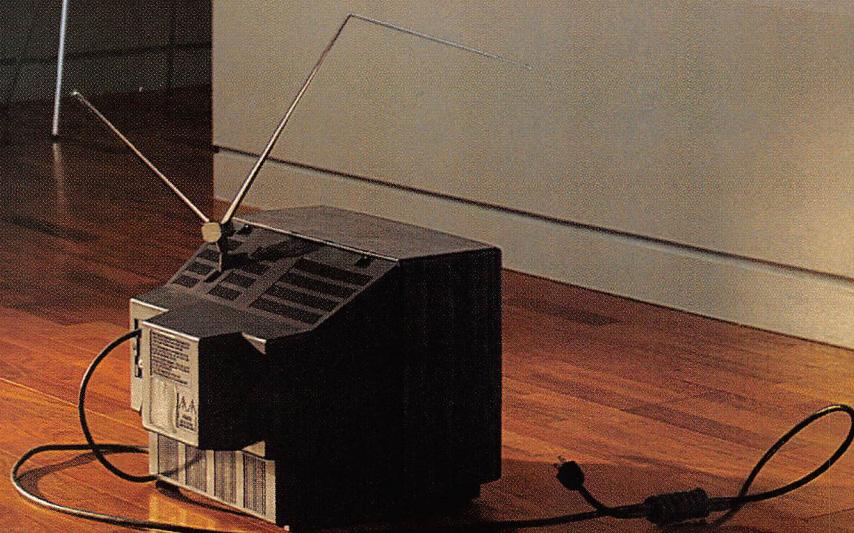
On a long drive but don't want to clutter the car with dozens of CDs? Burned as MP3 files, 10 hours of music will fit on one disc, but you'll need an in-dash player like Visteon's Mach MP3 to play it. The 30-watt-per-channel double-DIN-size CD receiver can be set either to treat all MP3s on a disc as if they were in a single directory or to recognize layered folders. Normal CD functions like scan, seek, and shuffle play are compatible with MP3 discs. Choose from five different faceplate finishes to complement your dash styling. Price: \$369. 734-666-2096, [www.evisteon.com](http://www.evisteon.com)



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The sleek 3 1/4" design and incredible picture quality of Sony's SuperTheater™ Flat Panel Monitor is enough to make any TV jealous. After all, it's hard not to be attracted to its incredible brightness and stunning color reproduction. And its sharp 1024 x 1024 resolution certainly adds a new dimension to your home theater experience. Of course, the fact that it's designed to hang either horizontally or vertically, is HDTV compatible, and comes in brushed silver or charcoal gray might make your old set feel inferior. But maybe that's because it is. For more information, call 1.800.295.SONY ext. CISB1.

[www.sonyavdesigner.com](http://www.sonyavdesigner.com)



PFM-42B1 42-inch<sup>†</sup>  
Flat Panel Monitor

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# new products



## RCA

CDs holding MP3 music

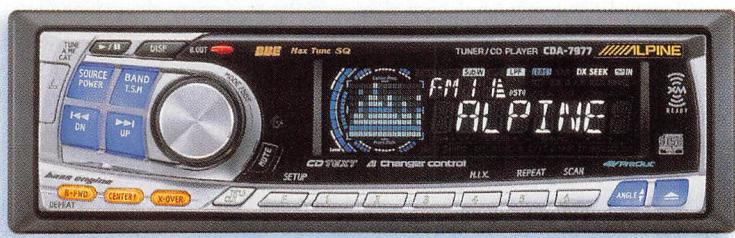
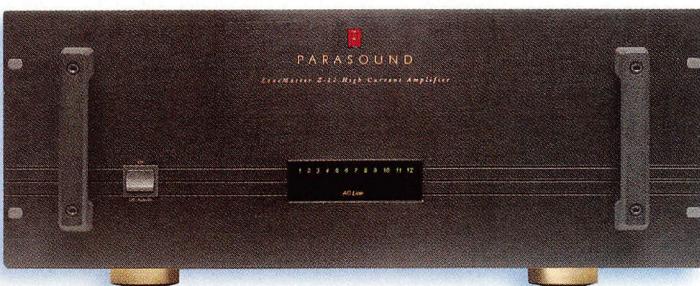
files will feel right at home in the RCA RS2538 minisystem's five-disc changer, which can even display CD/MP3 Text on its illuminated LCD readout.

The speakers get juice from the system's 200-watt amp, with 75 watts going to each ported subwoofer. The 28-pound changer/receiver measures 12 x 10 x 14 inches and also houses an AM/FM tuner with 32 presets. Price: \$399. 800-336-1900, [www.rca.com](http://www.rca.com)

## Parasound

Whether you want to provide sound to 12 different rooms or simply want a versatile power amplifier for your home theater, Parasound's ZoneMaster Z-12 is up to the job. The 85-pound amp is rated to deliver 50 watts to each of its 12 channels, and output pairs can be bridged to deliver 100 watts. Each channel has its own signal input but can also accept a left, right, or summed L + R signal from the amp's master stereo bus. All of the input jacks and multiway speaker binding posts are gold plated. Need still more channels? You can daisy chain as many Z-12s as you like. Price: \$2,000.

415-397-7100, [www.parasound.com](http://www.parasound.com)



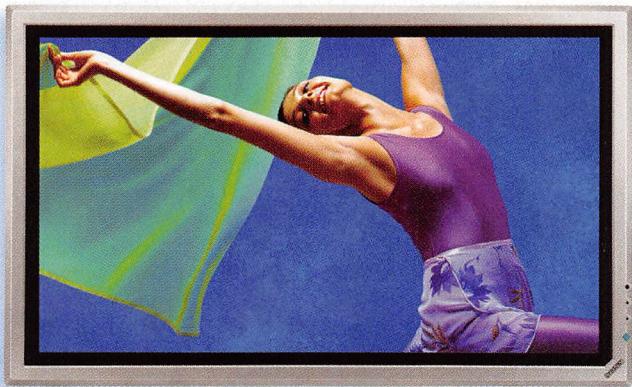
## Alpine

Companies like XM Satellite Radio have taken digital broadcasting into orbit, but to follow you'll need an XM-compatible car stereo head unit like Alpine's CDA-7977. The CD tuner can also control a compatible CD changer. Four preamp outputs facilitate connection to your car's sound system, and a wireless remote is included. You'll need an outboard XM tuner module to pick up digital satellite broadcasts. The AM and FM bands are still accessible any time you want to return to the 20th century. Prices: \$550; XM tuner price to be determined after XM service launch. 800-257-4631, [www.alpine1.com](http://www.alpine1.com)

## Sony

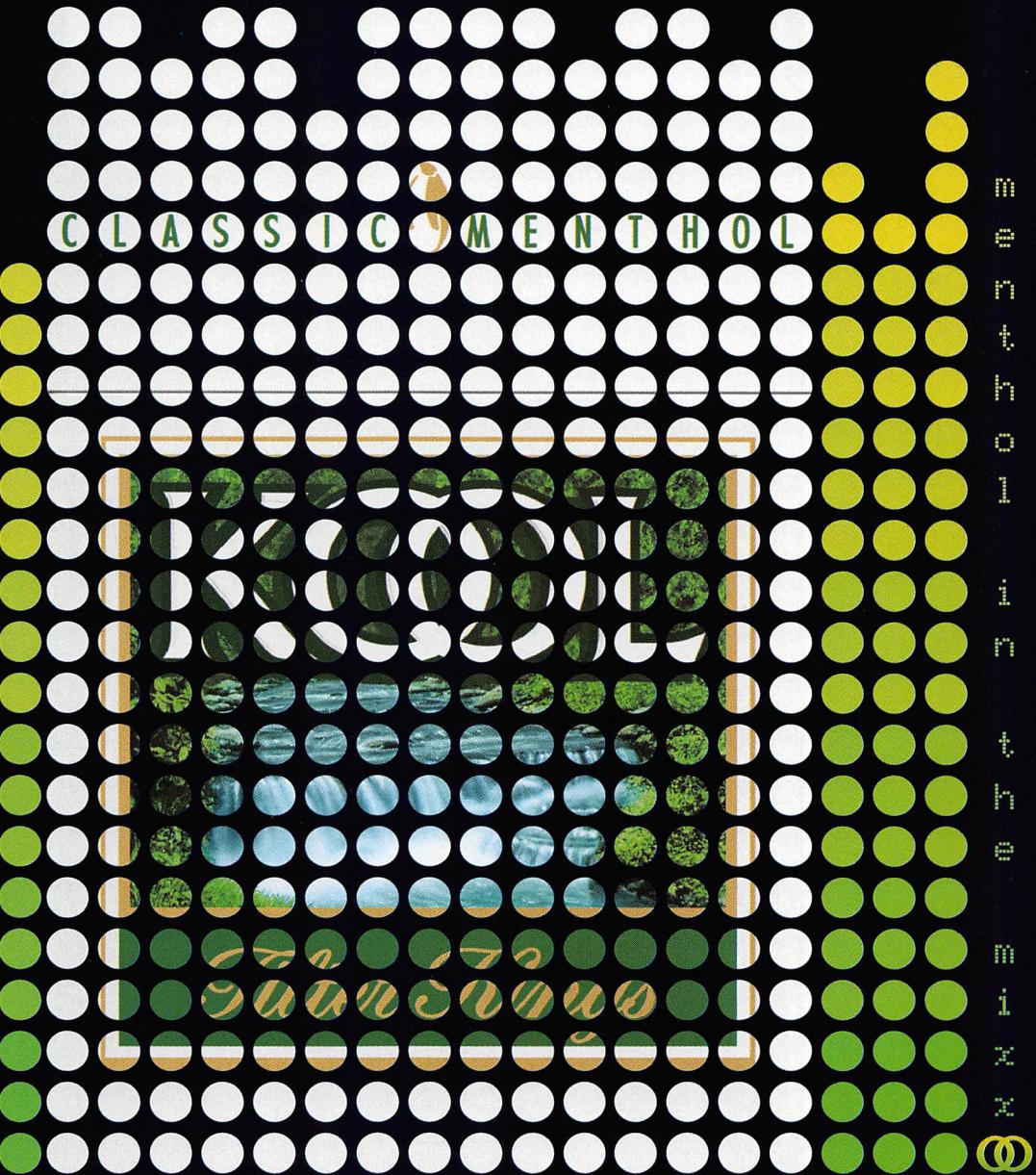
Look up on your wall! It's a painting! It's a window! No, it's — SuperTheater! More powerful than any analog TV, Sony's 42-inch PFM-42B1 SuperTheater plasma HDTV monitor has a resolution of 1,024 x 1,024 pixels and is only 3 1/4 inches deep. High-definition signals enter in a single bound through either of its two VGA inputs, and it also has composite- and S-video inputs as well as an RS-232 port. The 65-pound monitor is framed in brushed silver or charcoal gray. Flat, tilt, and rotating brackets are optional, and a remote control is supplied. Price: \$7,999.

800-686-7669, [www.sony.com/displaysystems](http://www.sony.com/displaysystems)





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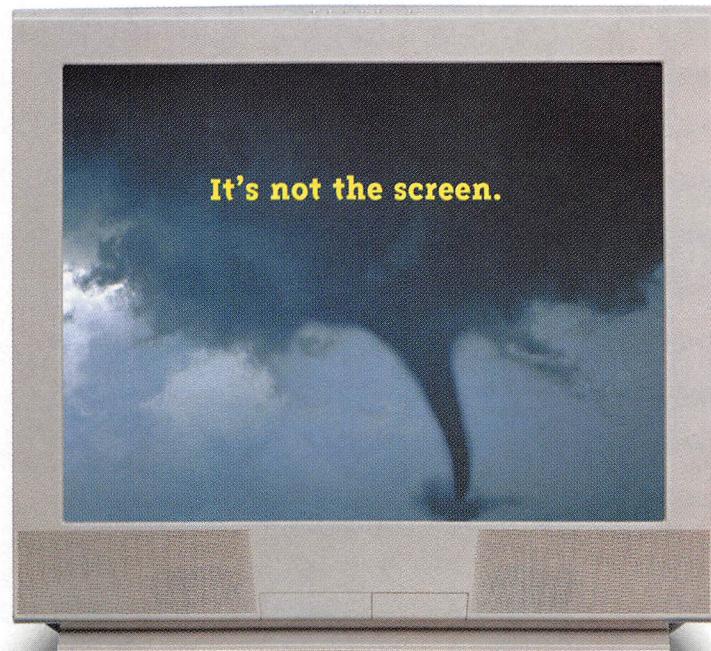


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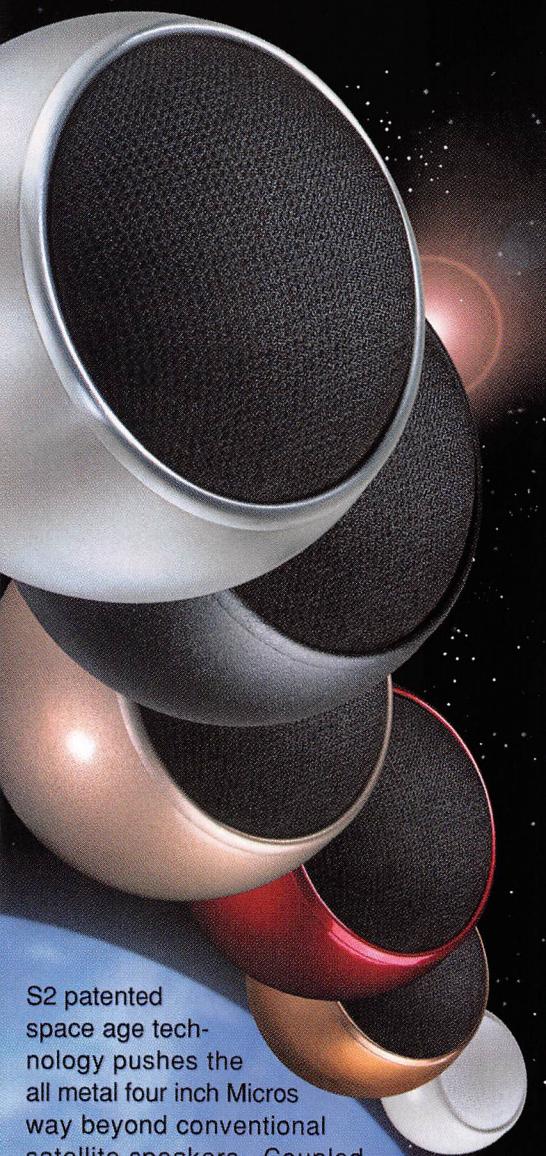
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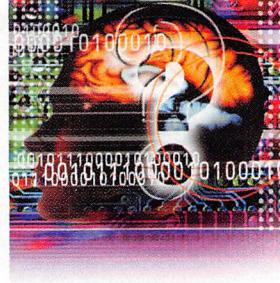
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## Q&A

IAN G. MASTERS

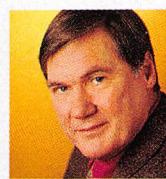
### Progressive-Scan DVD

**Q.** Do I need a digital or high-definition TV to use a progressive-scan DVD player?

**Victor Delacruz**  
Torrance, CA

**A.** You do need a TV with a wideband component-video input, which is found on almost all HDTV monitors but only a few older sets, to get any special benefit from a progressive-scan DVD player.

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But it will also work fine with regular TVs that can't display the 480p-format signal from its progressive-scan output. Just connect the TV to the player's S-video or standard (interlaced) component output, and you should see high-quality images from DVDs. But consider buying a progressive-scan player if you plan to get a TV in the next few years that has a wideband component-video input.

### Cold CDs

**Q.** When I play my car CD changer in very cold weather, the treble lacks its usual brilliance and clarity. But the sound returns to normal when the temperature isn't so extreme. Is the cold affecting the CD player's tracking?

**Eric Cannelongo**  
Wilmington, DE

**A.** A CD player is a mechanical device, in part, so it might be affected by cold weather. But you would probably experience skipping or muting rather than dull treble. My guess is that the frigidity is actually affecting your speakers. Extreme cold can cause things to tighten up, and that might well play havoc with the high frequencies, at least until the car warms up. I've never experienced this, however.

### Dolby Digital Inputs

**Q.** My Dolby Digital (DD) decoder has coaxial, optical, and RF inputs. I'm using the coaxial for a DVD player and the RF for a laserdisc player. I could use the optical input for my satellite receiver's DD output, but I'd prefer a coaxial (RCA) connection. Should I get an audio switcher to route

multiple coaxial outputs to one input on the decoder?

**Tony Williams**  
Havertown, PA

**A.** There's nothing wrong with using the optical input for your satellite receiver. I can't imagine why you'd prefer a coaxial connection, since both types work perfectly well. If you insist on using only coaxial feeds, a simple switcher shouldn't cause problems — but use a video switcher. Since analog video and coaxial digital audio signals have similar bandwidths, a video switcher should pass the digital audio signals as if they were video. Try this out first with your amplifier set at a very low level, however, to avoid the risk of sending a nasty digital spike through the system when you throw the switch.

### Unnecessary Subwoofer?

**Q.** My front L/R speakers have powered woofers with 400-watt amps and a frequency range of 38 to 150 Hz. Do I need a separate subwoofer to enjoy the LFE channel on DVDs? **Emanuel Nazario Irizarry**

Bayamún, Puerto Rico

**A.** To hear — and feel — all of the low-frequency-effects (LFE) action in blockbuster DVDs, you probably do need a subwoofer (see "Subway Series," page 76). You could set your receiver to reroute the LFE signal to your left/right front speakers, but some receivers fail to handle this properly, and you'd still lose whatever's going on below 38 Hz. If you prefer older or less raucous movies, however, you might not be missing much. Experiment with the placement of your speakers. The ideal locations for correct spatial effects and imaging are often not best for bass reproduction. If you find that's the case, adding a subwoofer you can place independently of the L/R pair will solve the problem. **S&V**

---

If you have a question about audio, video, or home theater, write to Q&A, **Sound & Vision**, 1633 Broadway, New York, NY 10019; e-mail, [soundandvision@hfmag.com](mailto:soundandvision@hfmag.com). Be sure to include your name, street address, and phone number for verification; only your name, city, and state/country will be printed. Sorry, but only questions chosen for publication can be answered.

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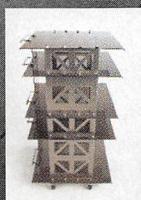
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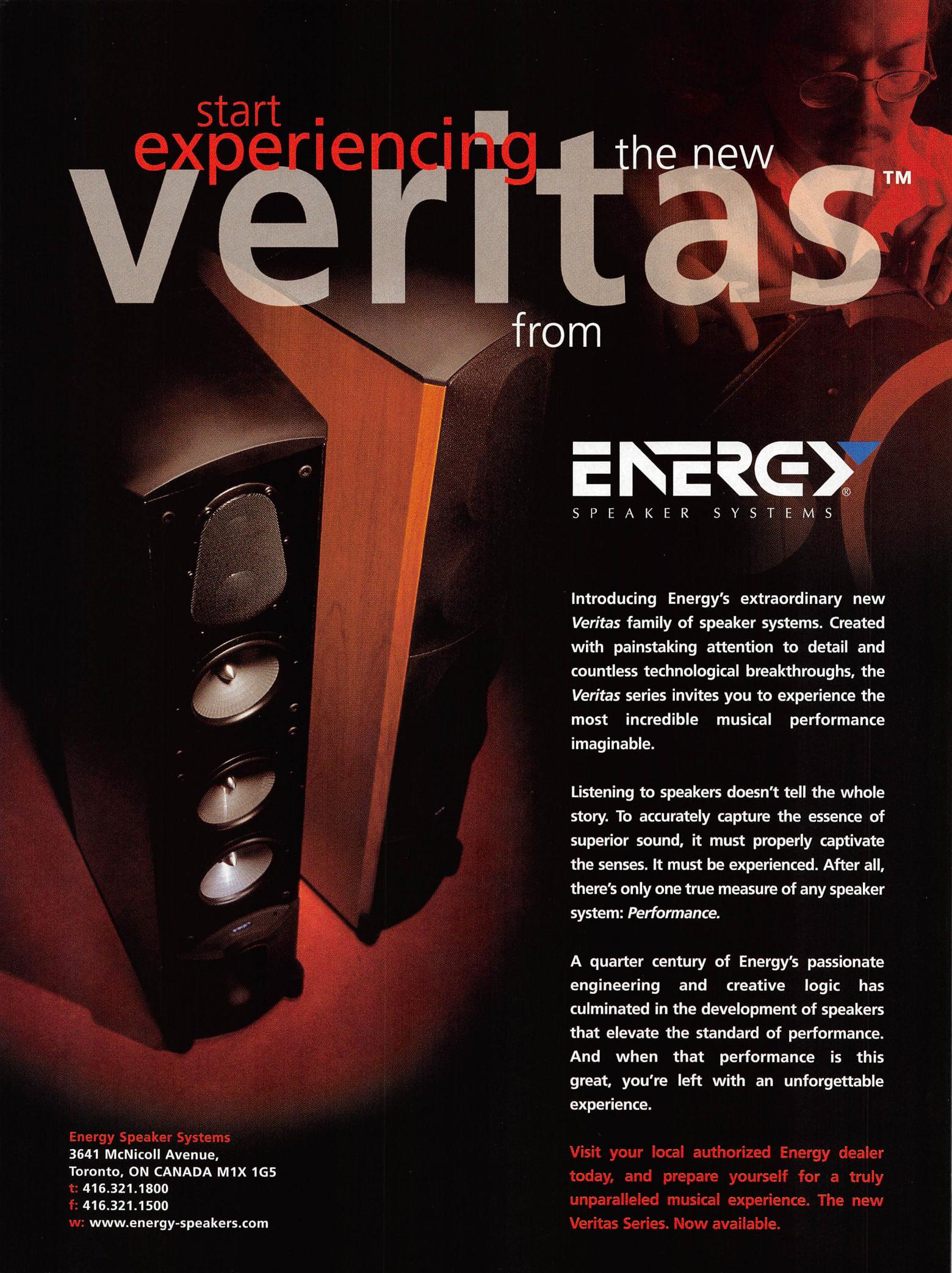
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# The DVD Bible, Version 2.0

**D**espite our extensive coverage of DVD, my full understanding of its complexities — and my ability to convey its myriad subtleties to you — has been hampered by the inaccessibility to mere mortals of the documents that constitute the DVD standard. To obtain a copy of those documents, I would not only have to fork over several thousand dollars for a license, but I would also have to sign a nondisclosure agreement. This would then put me in a classic Catch-22: I'd know everything I needed to know, but I wouldn't be able to tell anybody and certainly couldn't publish my findings in a magazine. (I keep hoping that one day a

**This volume should be on the bookshelf of anybody who is serious about DVD technology.**



Perhaps it's best that I haven't seen the standard yet — it may be incomprehensible (its author was a committee, after all). It obviously contains enough ambiguities and opportunities for misunderstanding to allow such things as the inability of many players to read discs from the first press runs of *The Matrix* as well as some players' loss of menu highlighting on the *Avia* test disc.

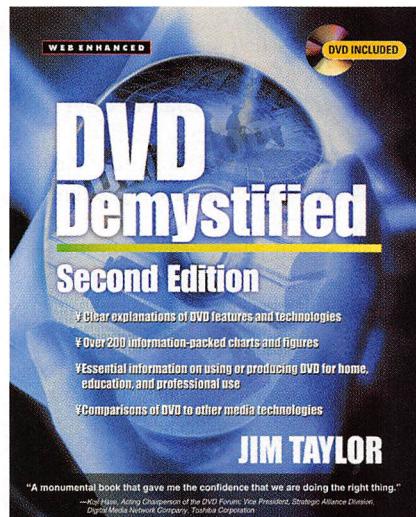
Thank goodness a comprehensible presentation of the DVD system has been available for the past three years. What had become the open-source bible of DVD knowledge, *DVD Demystified* by Jim Taylor, was recently issued in a second, expanded edition (McGraw-Hill, \$49.95). This volume should be on the bookshelf of anybody who is serious about DVD technology. In its 700 pages and the accompanying disc is almost everything a fan might want to know about the DVD system. The big exceptions are, of course, the nitty-gritty details of the DVD-Video encryption

system, but hackers already know where to find this information.

Among other things, the book contains long chapters on the history of DVD, the basics of the underlying technology (digital video and audio, aspect ratios, interlaced vs. progressive scanning), special features of the system (multiple subtitle languages, multiple camera angles, and so on), and detailed technical descriptions of DVD-Video and DVD-Audio discs and data streams. All of this information is tied together in clearly written text that should be understandable by anybody who can get through an entire **Sound & Vision** test report (the ability to read a graph would also be helpful). If only all technology handbooks were this easy to read.

*DVD Demystified* is also filled with lists, diagrams, and tables — lots of tables — all of which make for fascinating browsing. For example, Table 4.10, "DVD Patent Licensing," shows how much money each original company in the DVD Consortium gets when you buy a player or a disc, since the major patent "pools" all get a little something. The Philips/Pioneer/Sony patent pool receives \$5 or 3.5% of the cost for every player, whichever is higher, as well as 5¢ per disc. The Hitachi/Matsushita/Mitsubishi/AOL Time Warner/Toshiba/JVC pool receives \$4 or 4% per player and 7.5¢ per disc. Dolby Labs, which has managed to put a Dolby Digital chip of some kind into every DVD player, receives a maximum of 60¢ per player. Macrovision, the company whose pseudo-pulse and color-striping signals make it impossible to record DVD video onto a VCR, also gets a cut (4¢ to 10¢) for every disc carrying the anticopying signals. Since all these fees eventually filter down to the consumer, it seems we have to pay for *not* being able to record DVDs! Taylor estimates that \$30 of a \$300 player's price goes to royalty payments, as does 60¢ of the price of a disc.

To me, the 60¢ paid in royalties for the book's accompanying DVD makes the whole book worthwhile. In addition to a large number of test patterns that can be used for setting up a home theater system



(including the entire suite of THX Opti-Mode audio and video system-setup signals), you get collections of fine-looking and fine-sounding promotional trailers from Dolby, DTS, and THX. My very favorite segments are those showing what MPEG-2 video encoding looks like at various bit rates. Viewing the low-bit-rate material is just about all the education you need on what MPEG artifacts look like — fascinating, if hideous.

The new edition adds quite a bit of important technical material that has accumulated since the introduction of the DVD-Video system, particularly about DVD-Audio. But it also retains quite a bit of material from the first edition that is now largely irrelevant. For example, much of Chapter 8, which compares the DVD format with other media, could have been omitted with no great loss (especially the parts concerning laserdisc and VHS). The space could have been better used for more detailed discussions on what to look for in a player — especially such things as picture detail, letterboxing, and a progressive-scan output — and how to evaluate player performance in these and other areas. But maybe it's best that *DVD Demystified*, as good as it is, isn't as complete a guide to the system as it might be — that gives us at **Sound & Vision** a chance to fill in the gaps!

# Be Square

**M**ost every night around 3 a.m., you'll find me lying awake, tossing and turning, worrying whether Cameron Diaz is cuter than Drew Barrymore or if there are Chinese spies inside all those giant pandas. But mainly I worry about safeguarding the billions in revenue enjoyed by the multi-national record labels. What will the poor things do if MP3 file swapping continues unabated and people stop buying CDs? One person could buy a CD, then share it with everyone else on the planet. Everyone would have the music, but the record label would sell only one disc. Unless they charge a billion dollars for that disc, they wouldn't have a very good business model.

Of course, not unaware of that, the industry is creating new revenue streams — in particular, DVD-Audio and Super Audio CD. The record labels hope incentives like surround sound, studio-quality fidelity, and

video stills will inspire people to abandon free downloading and buy the music instead. The open question is whether people will pay for these enhanced versions or just get music for free through Napster or its successors.

## dilemma.



Unfortunately, the majority of the industry's current customers are kids, and most lack the fancy multispeaker home theater setups you need to appreciate the perks of DVD-Audio and SACD. Instead, most kids have crappy stereo speakers connected to PCs, so crappy two-channel MP3 files are just fine. And did I mention that MP3 files are free? That's another reason a \$25 SACD disc might not appeal to kids who are under severe budget constraints, given the high cost of tattoos and nose rings. Anyway, you can see why I worry so much — the record industry has this huge problem.

Fortunately, after countless bouts of in-

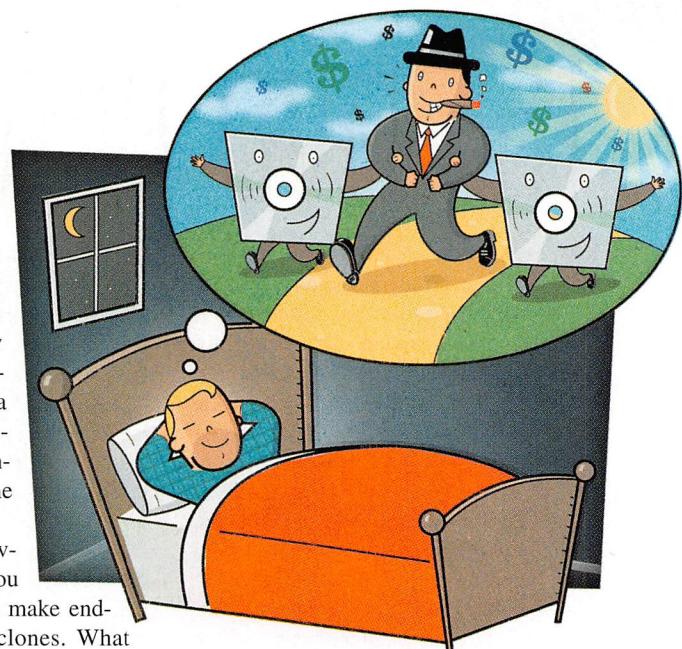
somnia, I have devised an exceedingly clever solution. Here's the key: the industry took a seriously wrong turn when it introduced the compact disc, a virtually indestructible music carrier that puts the unprotected bitstream into the hands of pirates.

You can play a CD forever, and it won't wear out. You can clone it endlessly, and make endless clones of clones of clones. What were they thinking? Isn't that like banks installing free coin dispensers in their lobbies? Even worse, to create that nightmare, the record industry turned its back on the ideal music carrier — the venerable LP. An LP deteriorates each time you play it. After many playings, it wears out, and if you copy it, you get a substantially inferior version. And copies of copies are unlistenable. It's the perfect medium for selling recorded music.

My solution is simple: the record industry must re-embrace the LP. And with a little shrewd marketing, it'll be an easy move. For years, audiophiles have relentlessly insisted that LP sound blows away CD sound, so the industry should reward their lunacy and satisfy that demand! Some folks think LP records are funky and anti-establishment — so capitalize on that! Bring back the LP in a big way!

No doubt some will wonder what's going on and perhaps even question the industry's motives. They'll need to be persuaded with a little marketing sizzle. Thus, I propose that instead of making the same old round records, the new records should be square. That's right, *square*! It would be a bold departure from convention — very novel, very modern, yet retro at the same time. And here's a marketing gimmick that came to me just last night — we'll call it LP<sup>2</sup>. Pretty clever, eh?

Of course, the record industry doesn't work in a vacuum — the hardware divisions of the conglomerates need profits too. Well, imagine all the money equip-

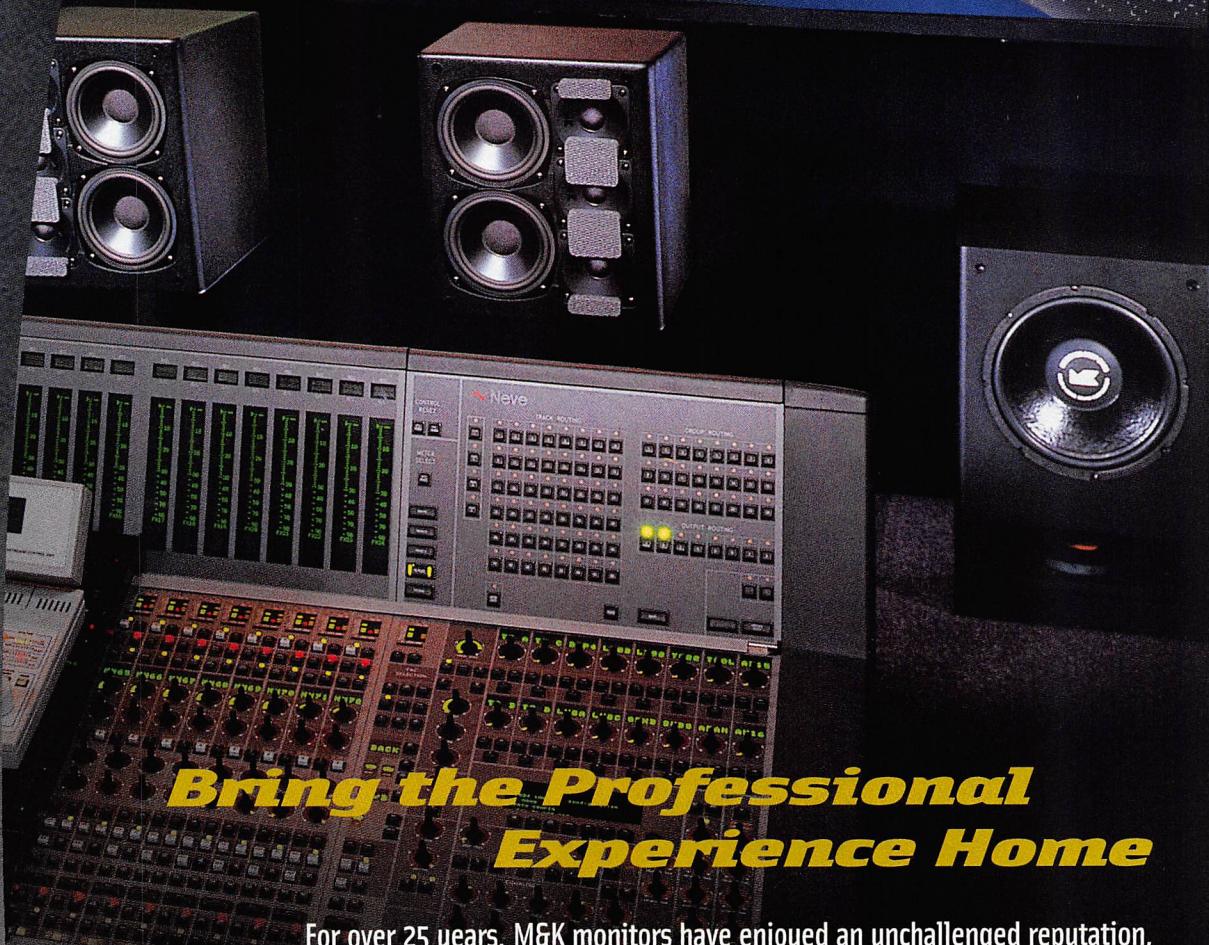


ment manufacturers would make selling turntables to play square records! No use dusting off those old turntables in the garage — they'd be completely incompatible. Imagine the boost to the U.S. economy. The late Sen. Everett Dirksen used to tell people that solving the unemployment problem was easy: All you had to do was mint square coins. An army of employees would be needed to convert all the vending machines. That's exactly like what I'm proposing!

The final bit of genius, if I may say so, is that square records would wear out really fast. Imagine the carnage inflicted by a diamond stylus every time it slams into a right-angled groove wall. After just a few playings, you'd have to go out and buy another copy! And you'd probably need a new stylus every week, too. Imagine the profits from turntable sales, rereleases of back catalogs on LP<sup>2</sup>, and resales of titles to replace discs that wore out. And best of all, LP<sup>2</sup> is inherently copy-resistant. I seriously doubt that any MP3 coder could capture the classic "clunk" sound that would recur four times per revolution.

Of course, the consumer would be the real winner. Imagine how cool it would be to return to analog — and not just ordinary analog, but square analog! Frankly, I can't think of anything more exciting than that. I hope you'll support my proposal. Honestly, LP<sup>2</sup> is an idea whose time has come. And now, you'll have to excuse me — I was up all night, and I'm *really* sleepy. **S&V**

20th Century Fox  
4 Media Company (4MC)  
The Bakery  
Casablanca Film & Video  
Chace Productions  
Chicago Audio Works  
Cinram/POP  
DVD Center  
Complete Post  
Digimix  
Digital Sound  
and Vision  
DTS  
Dolby Labs  
NY, LA, SF  
DreamWorks SKG  
Electric Switch  
Enterprise DVD  
and Post  
FotoKem Film  
and Video  
Gateway Mastering  
HBO Productions  
HD Vision  
Hit Factory  
JAK Productions  
Laser Pacific  
Lucasfilm LTD  
Monterey Post  
Motorola DSP  
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Sony Music  
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Universal Studios  
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# ENT



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# Pioneer

## **Elite 53-inch HDTV Monitor**



There's an episode of *The Simpsons* in which the government coerces Homer into spying as reparation for a botched tax return, so he turns to his buddies at Moe's bar for incriminating material. He strolls in wearing a wire and casually asks if anyone's been doing anything illegal. One of the patrons claims to be masterminding an antigovernment operation to "teach them to drag their feet on high-definition TV!" The wacko is immediately seized by U.S. agents and hauled off.

I wouldn't place all the blame on the

government for HDTV foot-dragging, but the fact remains that true high-definition TV is still pretty rare. In other words, if you buy an HDTV monitor, you're going to use it to watch lots of regular TV and DVDs in the intervals between HDTV broadcasts. The good news about Pioneer's PRO-510HD HDTV monitor is that it's adept at displaying both standard and high-def programs.

Part of Pioneer's Elite line of rear-projection TVs, the PRO-510HD has a 53-inch (diagonal) screen with a wide 16:9 aspect ratio and sports a gloss-black lacquer

finish worthy of a baby grand. It uses a trio of 7-inch CRTs (cathode-ray tubes), which can display native 1080i (interlaced) high-definition and 480p (progressive) standard-definition digital signals from an external HDTV tuner as well as 480p signals from a progressive-scan DVD player.

Regardless of the equipment in your A/V system, the 510HD can probably connect to it — it's definitely compatible with all existing HDTV tuners. All three rear-panel input groupings include connections for composite- and S-video plus stereo audio, and two have component-video connections that accept 480i, 480p, or 1080i signals. The third set of inputs has a VGA-style jack for signals from HDTV tuners with RGB outputs, such as RCA's DTC100.

The PRO-510HD is not much bigger than the largest tabletop RPTVs offered by other manufacturers, so it should appeal to apartment dwellers and those with medium-size home theaters. The set comes without its protective screen shield installed, so you can leave it off for optimal image quality — just be sure the kids are old enough to resist touching the screen (though with HDTV it's sometimes difficult even for adults to resist).

The set comes with a preprogrammed remote control, which can learn some functions for devices whose codes aren't already in its memory. Even though it's entirely backlit, the handset has too many

## fast facts

## KEY FEATURES

- Displays 1080i-format HDTV programs from an outboard DTV tuner
- Upconverts standard 480i signals to 480p
- Widescreen (16:9) rear-projection screen
- Two component-video inputs, one RGB input

**DIMENSIONS** 50 inches wide, 50 $\frac{3}{4}$  inches high, 25 inches deep

**WEIGHT** 280 pounds

**PRICE** \$6.30

**MANUFACTURER** Pioneer Electronics,  
Dept. S&V, 2265 E. 220th St., Long Beach,  
CA 90810; [www.pioneerelectronics.com](http://www.pioneerelectronics.com);  
800-746-6337

## HIGH POINTS

Excellent line-doubler performance.  
Extensive picture adjustments  
with separate memories for each input.

## LOW POINTS

Pricy for its screen size.  
Undistinguished remote control.

undifferentiated buttons, so it took me a while to get used to using it in the dark.

When I first turned on the TV and clicked over to the Picture menu, I was impressed by the choices offered. Sure the menu design is boring, relying on text where other sets use slick graphics, but most digital TVs don't have the options this one does. Among the more unusual is a level setting for scan-velocity modulation (SVM) — a picture "enhancement" that I was glad to be able to turn off.

All those adjustments are one thing, but most home theaters built around an HDTV have a good number of program sources, which require different settings for a consistent picture. The PRO-510HD has a separate user memory for each input. After I painstakingly set up one input for a Panasonic DVD-H1000 progressive-scan DVD player, I switched over to the satellite receiver — the picture looked a little soft and dark, so I adjusted the sharpness and brightness. It was nice to go back to DVD and not have to redo the settings!

Aside from the user settings, Pioneer provides three picture and five color-temperature presets (two more than usual), including one that Pioneer claims matches the 6,500-K NTSC standard. Considering how far off many TVs are, it came relatively close but was still too red. I set to work adjusting the set's grayscale and was able to get much closer to 6,500 K, though I couldn't match it perfectly (see "in the lab" for details).

After calibration, the picture looked excellent with every source I tried. Test patterns revealed an accurate color decoder with only a slight bias toward red, in itself an improvement over many other HDTVs I've seen. In the helicopter-attack chapter of *Apocalypse Now*, the deep orange and blue of the sky and sea looked spectacular,

and the shadows inside the choppers showed fine gradations of gray.

My first video torture test was the opening of *Star Trek: Insurrection* as the credits roll and the camera slowly pans over haystacks and a bucolic village with futuristic buildings. The motion is enough to tax all but the best line doublers, whether in the DVD player or the TV, as the interlaced video is converted to progressive scan for display on a high-def monitor. Most high-def TVs have built-in line doublers to enhance analog programs, but they often do a sub-par job. Happily, that was not the case with the PureCinema doubler Pioneer includes in the PRO-510HD. The image

was rock solid, rendering the complex hay with little interference and the diagonal lines of the buildings with no jagged edges or moving lines.

For comparison, I switched back and forth between the DVD player's standard and progressive-scan component outputs looking for differences. The progressive output looked very slightly cleaner than the interlaced output as line doubled by the PRO-510HD — and I do mean "very." One thing to consider when mating a DVD player with this set: it "locks" into the widescreen aspect ratio when fed a progressive-scan signal, so with most players you can't

watch nonanamorphic DVDs in progressive-scan mode without seeing an unnaturally stretched image.

Pioneer includes five different aspect ratios, including four designed to resize 4:3 images to the 16:9 screen. I preferred 4:3 Normal, which places gray bars on either side of the image, but if you want to fill the screen, the Cinema Wide setting achieves full coverage with minimal cropping on the top and bottom.

I expected a great picture with HDTV sources, and I wasn't disappointed. In HBO-HD's presentation of *Entrapment* in 1080i HDTV on Dish Network, I could discern the slight sheen of sweat on Catherine Zeta-Jones's skin as she dealt with a den of thieves in humid Kuala Lumpur. Her face was beautifully detailed, and I really noticed the depth of field possible with HDTV — many background elements re-



mained in focus even during closeups. The Pioneer's high-def performance was as good as any rear projector with 7-inch CRTs I've seen.

It was hard to find anything wrong with the picture. The set's initial presets were a little off, but after calibration it revealed as much picture detail as anything in its class. And well it should. At \$6,300, the Pioneer PRO-510HD costs more than any other CRT-based rear-projection HDTV near its size. Given the multitude of options out there, including comparable-quality external line doublers for \$1,000, the price tag seems a little high. Then again, the processing is built in. Pioneer's PRO-510HD does a great job of displaying HDTV but also looks impressive with standard-definition signals, which is mostly what we'll be watching until the government and the other powers that be agree to stop dragging their feet on HDTV broadcasting.

S&V

## in the lab

### COLOR TEMPERATURE

(Film setting before/after calibration)

Low window	4,839/6,300 K
High window	7,094/6,700 K

### BRIGHTNESS

(Film setting before/after calibration)

.....	35.3/15.0 ftL
-------	---------------

The PRO-510HD required calibration to bring its grayscale close to the 6,500-K NTSC standard, which has to be performed by a qualified technician with specialized equipment. Discuss it with your dealer before purchase, or contact the Imaging Science Foundation (561-997-9073, [www.imagingscience.com](http://www.imagingscience.com)).

Out of the box the set's most favorable presets, Movie picture mode and Film color temperature, resulted in red bias at the low end of the scale and excessive brightness at the high end. After calibration, its grayscale was within 200 K of the standard, and brightness was near optimal for low-light viewing conditions (12-ft. average for cinemas). The NTSC color decoding was very accurate. The set has an ample power supply and can hold the same black level regardless of picture content. Finally, the 3-D digital comb filter exhibited few artifacts, image geometry was excellent, and overscan was 5%, which is considered normal.

— D.K.



# Samsung

## DVD-M301 DVD-Video Player



Tell me if any of this sounds familiar: You want to buy a DVD-Video player to impress your friends with your techo-hipness (and besides, you're tired of watching fuzzy VHS rentals). You have a digital surround receiver, so the player doesn't need a Dolby Digital or DTS decoder. You have a growing collection of music compilations, so the player should be able to handle recordable CD-R discs. You also have a growing number of CD-Rs on which you've recorded music from the Internet, so it'd be great if the player decoded MP3 files as well. You'd like to have both S-video and component-video outputs. Of course, you want a selection of cool features and a well-designed, easy-to-use remote to control it all. Attractive styling wouldn't be a bad thing. Finally, you'd appreciate getting all this for, oh . . . around \$200.

Congratulations! I think I've found your player.

The Samsung DVD-M301 has a nice silver-gray finish. I like that color — I'm going to buy a silver-gray Audi TT someday. The player's front-panel styling has a modicum of tasteful flair. The control set is pretty basic, but there is a jog/shuttle knob for functions like frame advance, chapter/track selection, and fast forward and reverse.

There's also a headphone jack with level control. Around back, two RCA connectors provide analog audio output, while another RCA jack and a Toslink connector provide coaxial and optical digital audio output. A slide switch selects between composite/S-video and component-video output.

The remote is several cuts above average. Its silver face matches the player, and the black lettering on its white buttons is highly legible. Better yet, the buttons are well laid out, and there is even a small thumb-operated joystick. If only the buttons glowed in the dark . . . The remote duplicates the front panel's controls and adds such perks as slow motion, subtitle-language selection, and three bookmarks. It also lets you engage Spatializer N-2-2 virtual surround sound for listening through just two speakers, 2x scan with normal-pitch audio (great for watching boring movies in half the time), A-B repeat, 2x and 4x picture zoom, and a digest function that simultaneously shows the beginnings of nine chapters.

An interesting feature that will make video purists shriek is Screen Fit, which expands the picture so that a widescreen movie fills a standard 4:3 aspect ratio screen. Overall, the feature set is surprisingly good for a \$230 player.

Installation was a snap. I connected the player's optical digital and analog audio outputs to my receiver and its component-video output to my TV. The onscreen setup menu is very clean and was easier to use than those of some high-price players. A Display button calls up a tidy onscreen readout of the title number, chapter/track numbers, elapsed time, soundtrack type, subtitle language, and volume setting.

To check out the player's video performance, I turned to the DVD of *The Five Senses* (New Line), an independent Canadian film with a plot that explores the realms of sight, sound, taste, smell, and touch. The film's clever use of sensory in-

### fast facts

#### KEY FEATURES

- Plays CD-R and CD-RW discs
- Decodes MP3 files on disc
- Spatializer N-2-2 virtual surround sound
- Component-video output
- Headphone output with level control

**DIMENSIONS** 17 inches wide, 2 $\frac{3}{4}$  inches high, 9 $\frac{1}{2}$  inches deep

**WEIGHT** 6 $\frac{1}{4}$  pounds

**PRICE** \$230

**MANUFACTURER** Samsung

Electronics America, Dept. S&V, 105 Challenger Rd., Ridgefield Park, NJ 07660; [www.samsungusa.com](http://www.samsungusa.com); 800-726-7864

## HIGH POINTS

- Terrific bang for the buck.
- Good feature set.
- Easy setup menu.
- Good remote design.

## LOW POINTS

- Crude MP3 onscreen menu.
- Average video quality.
- Few video tweaks.
- Sluggish transport when playing CDs.

put begins in Chapter 1 as a woman steps from a sensory-deprivation tank and sits on a bed, its white sheets inviting in the softly lit room with its warm, muted colors. In a darkened room in Chapter 2, a fish tank is softly illuminated from below and from a window beyond as silver fish swim in the cloudy water. The DVD-M301 displayed these tricky shots without any obvious artifacts, but its MPEG-2 decoding, or video digital-to-analog (D/A) conversion, produced images that didn't seem to be quite as crisp as those I've seen from the best players.

The film's Dolby Digital 5.1 mix is ingenious. In Chapter 2, a man listens intently through a heating vent to a conversation in an adjacent room. The sound is muffled and indistinct but becomes clearer as the camera pans through the wall, revealing a woman hugging her child in soft light. In Chapter 7, a man regards a seascape on the wall. As the camera moves into the painting, the sounds of the sea — gulls and

crashing waves — increase in all the channels until they fill the room. Also in Chapter 7, a woman makes a phone call from an airport pay phone; she does not hear — but we do — the faint sound of a TV news report in the background describing a child's abduction. Of course, my receiver did all the heavy lifting to decode the Dolby Digital signal, but at least the player read it off the disc and passed it on without a glitch.

To check out the player's audio D/A

converters, I played a couple of CDs including *Blue* by Third Eye Blind, an interesting Left Coast rocker. On songs like "The Red Summer Sun" the guitars and vocals really wail, but the DVD-M301 kept everything under control, with clean delineation of the complex musical textures in this dynamic mix. In short, there were no problems with CD sound quality. However, the transport was sluggish during CD playback — backward track skipping in particular was painfully slow.

One of the player's important perks is its dual laser, which enables it to play write-once CD-R music discs as well as the rewritable CD-RWs I tried. I also played a variety of discs on which I've recorded MP3 tracks. Although the spiffy DVD/CD menus are not operable in this mode, the player obediently displayed a rudimentary list of folder and file names onscreen and let me select files for playback. Choosing files is, as usual, like navigating a file/folder arrangement on a Windows PC or a Mac.

The owner's manual warns that MP3 files recorded at bit rates of less than 128 kilobits per second (kbps) might not play back properly (it's not clear whether it means there'll be glitches or an inherent degradation in sound quality), but I successfully played files with bit rates ranging from 32 to 320 kbps. Track navigation and

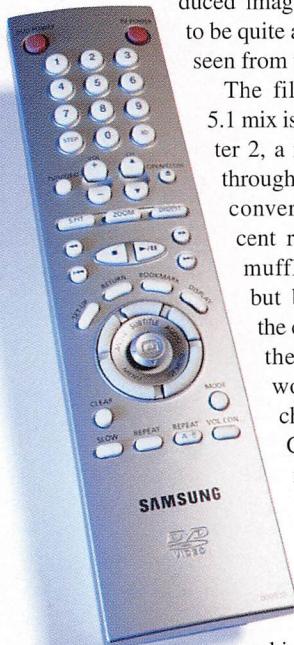


"Baby, your eyes are as crisp as the picture from *The Five Senses* as played on the Samsung DVD-M301."

decoding worked well; as always, sound quality was primarily a function of the bit rate. I also played discs with MP3 files in some folders but not in others. The player found and played the MP3 files and ignored the other data.

Sometimes you pay a lot for things you think will impress your friends. But your friends should be even more impressed when you spend less and get a good deal. The Samsung DVD-M301 isn't just a good deal — it's a *terrific* deal, one of the best I've seen. It offers a comprehensive but sensible feature set — including all the stuff you need and omitting stuff you probably don't — as well as CD-R and MP3 playback, and component-video output, for a low price. Your friends will be very impressed. In fact, at this price, you could probably buy players for them, too. Now, that's *really* impressive.

S&V



## in the lab

### CD AUDIO PLAYBACK

All tests except defect tracking were made with *Sound & Vision*'s test CD-RW using signals containing dither, which sets limits on measured distortion and noise performance.

**Maximum output** ..... 2.0 volts

### Frequency response

20 Hz to 20 kHz +0.05 dB, -0.1 dB

**Noise level** (re -20 dBFS, A-wtd) ..... -74.7 dB

**Excess noise** (without/with sine-wave signal)

16-bit (EN16) ..... +0.4/+0.4 dB  
quasi-20-bit (EN20) ..... +13.4/+13.9 dB

**Distortion** (THD+N, 1 kHz)

at 0 dBFS ..... 0.0047%  
at -20 dBFS ..... 0.021%

**Linearity error** (at -90 dBFS) ..... +0.2 dB

**Noise modulation** ..... 0.5 dB

**Defect tracking**

(Pierre Verany test disc) ..... 200 µm

### DVD-VIDEO PERFORMANCE

Measurements were made from a variety of DVD test discs, all through the player's composite-video output except as noted.

**Maximum white level** ..... +2 IRE

**Setup level** ..... +7.5 IRE

**Differential gain** ..... 0%

**Differential phase** ..... 0°

**Horizontal luminance frequency response**  
(re level at 1 MHz)

at 4 MHz ..... ±0 dB

at 5 MHz ..... -0.6 dB

at 6 MHz ..... -0.9 dB

at 6.75 MHz (DVD limit) ..... -1.1 dB

**Onscreen resolution** ..... 540 lines

**Pixel cropping** ..... left 0, right 0, top 0, bottom 4

**In-player letterboxing** ..... poor

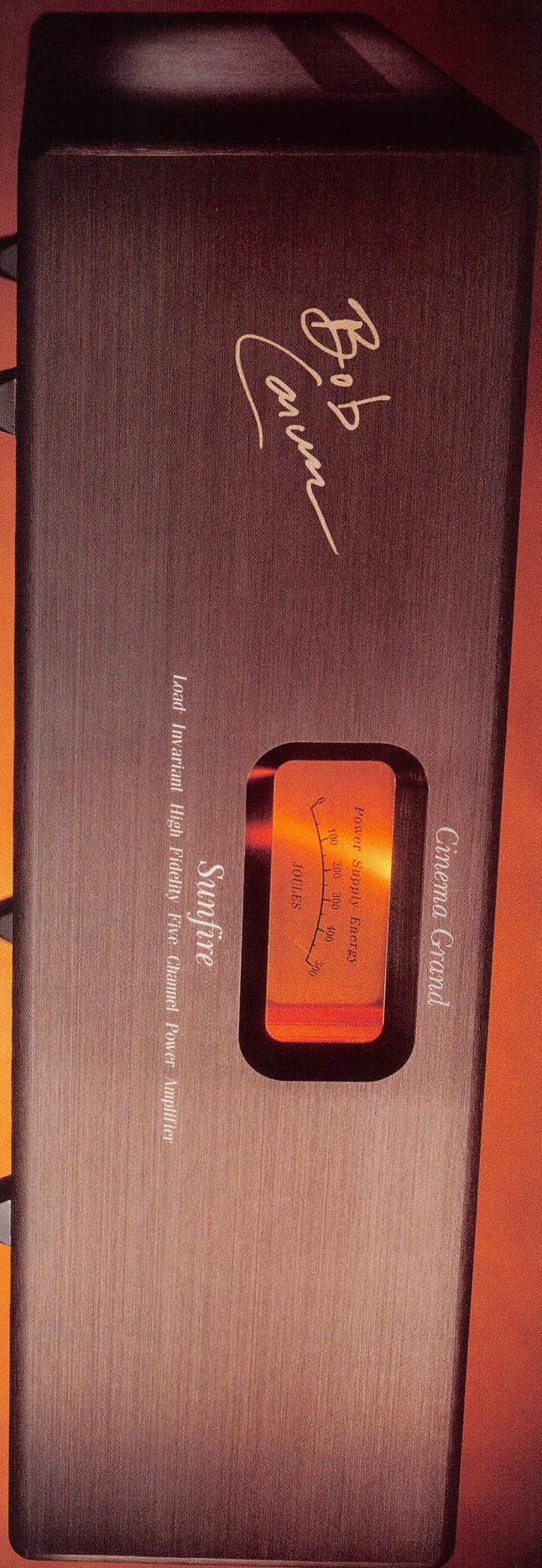
**Component-output level error**  
(Y/P<sub>r</sub>/P<sub>b</sub>) ..... +5.3/-11.6/-12.7%

**Component-output timing error**  
(P<sub>r</sub>/P<sub>b</sub>) ..... +9/+8 nanoseconds

The player's main deficiency on the test bench was its large component-output color-level errors, which can lead to less saturated colors in the image than from the other outputs. Not all component-input monitors can correct for this problem.

— David Ranada

gentle giant



*Sunfire*

*Load Invariant High Fidelity Five Channel Power Amplifier*



the **cinema grand** signature

*five-channel amplifier*

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*Bob Carver*  
**Sunfire**  
*...from his mind & soul*



# Harman Kardon

## AVR 510 Digital Surround Receiver



**H**arman Kardon's AVR 510 boasts several intriguing features. It's the first digital surround receiver we have reviewed that incorporates stereo decoding for MP3-format digital audio files. Of course, it also does Dolby Digital, DTS, and Pro Logic decoding for surround sound, and there are additional surround modes, including Harman's own Logic 7.

Neat feature No. 2 is an all-new preprogrammed/learning universal remote control that incorporates a microphone and sound-level meter so you have everything you need to automatically balance the levels of the five main output channels. Harman Kardon calls this feature EZSet.

Like most A/V receivers in its class, the AVR 510 also provides a set of fully independent line-level stereo outputs for a second zone along with a multiroom infrared (IR) control input so you can select programs and control volume from the remote room. Harman Kardon even includes a separate, basic remote control for use in the second room.

And check out this unusual wrinkle: the front-panel A/V jacks not only provide a convenient extra input for a camcorder or videogame console, but an onscreen menu lets you convert them to *outputs* for feeding a recorder. An adjacent LED indicator turns red when the jacks are in output mode, reverting to green for input whenever the receiver is turned off and on again. The front panel also sports a pair of digital audio connectors, one optical and one coaxial, which normally function as inputs. Like the analog jacks, the coaxial input can also be converted to an output. Talk about flexibility!

The AVR 510 has the same handsome design Harman Kardon has used for several years, with black glass covering the top half of the front, including the large, three-part display. A big volume knob sits above three small knobs for bass, treble, and balance — I'm seeing fewer and fewer such easy-to-use rotary controls these days. The tone controls operate in all surround modes as well as in stereo, but only on the front left/right channels.

The receiver's back panel has a healthy assortment of inputs and outputs. All video paths offer a choice of composite- or S-video connectors, and there are two sets of component-video input jacks, hard-wired to DVD and Video 2. (Like most receivers with component connections, the AVR 510 cannot send onscreen menus to its component output.) Other highlights include preamp outputs and power-amp inputs for all five amplified channels as well as a 5.1-channel analog input for a DVD-Audio or multichannel Super Audio CD player. (As

### fast facts

**RATED POWER** 70 watts x 5 into 8 ohms from 20 Hz to 20 kHz with less than 0.07% THD, channels driven individually

**DIMENSIONS** 17 1/4 inches wide, 6 1/2 inches high, 17 1/8 inches deep

**WEIGHT** 35 pounds

**PRICE** \$999

**MANUFACTURER** Harman Kardon, Dept. S&V, 250 Crossways Park Dr., Woodbury, NY 11797; 800-422-8027; [www.harmankardon.com](http://www.harmankardon.com)

# test report

## key features

- Dolby Digital, DTS, and digital-domain Pro Logic decoding
- Decodes MP3 data fed to digital inputs in standard (SPDIF) digital audio format
- Logic 7 surround modes for music and TV/movie sound
- 1 Theater mode, 2 Hall modes
- Level/bass-management settings stored separately for each surround mode
- Decodes HDCD
- VMAX virtual surround for two-speaker playback
- Front-panel A/V and optical/coaxial digital audio inputs; all but optical jack can be converted to recorder outputs
- 3 A/V inputs, 2 A/V outputs on back panel, all with S-video, 2 with component video
- 2 optical and 2 coaxial digital audio inputs, 1 optical and 1 coaxial output on back; can be assigned to any digital source
- 5.1-channel external analog audio input
- 2 analog audio-only inputs, 1 tape loop
- 5-channel pre-out/main-in jacks
- Headphone jack
- Multiroom stereo audio output and IR control input
- AM/FM tuner with 30 presets
- Binding posts for all speaker outputs
- Preprogrammed/learning main remote control with microphone and sound-level meter for automatic EZSet speaker balancing; 5-macro capability
- Simplified second-room remote control

with every receiver we know of, the multi-channel input signals go straight to the amplifier section, bypassing the bass-management circuitry.) All this combines to earn the AVR 510 a solid A grade for flexibility — maybe an A+.

After introducing the receiver to my usual suite of reference speakers and source components — setting all speakers to “small,” with bass directed to my subwoofer — my first order of business was to put its EZSet auto-level-balancing gizmo to the test. Simply hold the remote upward at arm’s length while you’re in the main listening position, keep it steady, and hold in its SPL (sound-pressure level) key. The receiver automatically cycles twice through the five channels, playing level-set noise and robotically fiddling levels up and down while an LED on the remote changes color from red (too loud!) or amber (too soft!) to green (j-u-u-st right!).

The system worked very well, but with one caveat. The final levels were all within 1 dB of those I arrived at by performing the same task manually using my tripod-mounted sound-level meter — pretty

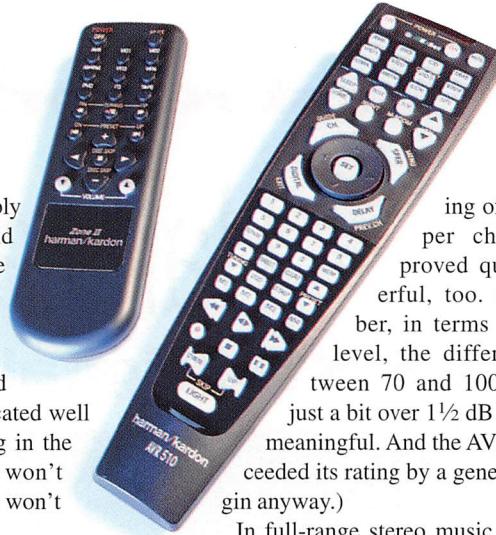
darned good and considerably better than most users could do by ear. The caveat? While you hold the remote at the listening position, it must have a clear line of sight to the receiver for its infrared signals. If the receiver is located well to one side instead of being in the front of the room, EZSet won’t work properly — but it also won’t give you an error message.

Harman Kardon has built a bit more flexibility into the AVR 510 than many receivers offer, so it demands (and rewards) a bit more planning on the part of the user. For one thing, any of the six digital audio input jacks — counting those on the front as well as the back — can be assigned freely to any source. For another, the receiver remembers your surround-mode, speaker-size, and channel-level settings individually for each assigned source.

You could, for instance, set up the DVD input with Dolby Digital as the default surround mode, “small” speakers plus a subwoofer, and channel levels calibrated for movies, while leaving the CD input set up for stereo and “large” (full-range) front left/right speakers. These two inputs might even be supplied by the same component — a DVD player’s optical digital audio output could be assigned to the DVD input and its coaxial output to the CD input. What’s more, each surround mode stores its relative channel levels individually, so you might use the calibrated balance dialed in by EZSet for Dolby Digital while setting the surround channels in the two Hall modes a couple of decibels higher.

All this makes the AVR 510 highly customizable if you’re prepared to take the trouble. The downside is that it’s more complex to set up, particularly since you must set the channel levels and bass management individually for each input you want to use.

The AVR 510 sounded excellent in both two-channel stereo and surround modes — and despite its relatively modest power rat-



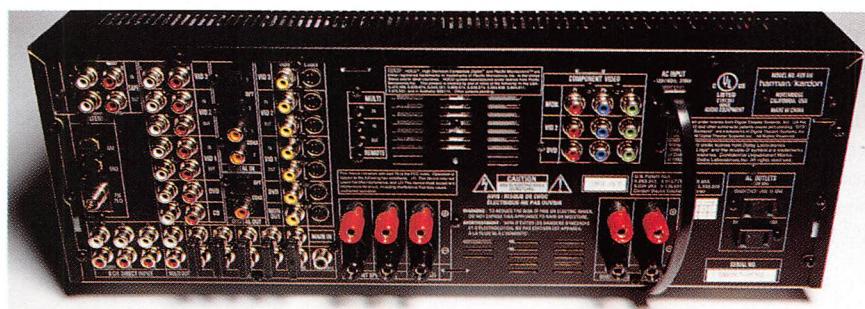
ing of 70 watts per channel, it proved quite powerful, too. (Remember, in terms of sound level, the difference between 70 and 100 watts is just a bit over 1½ dB — hardly meaningful. And the AVR 510 exceeded its rating by a generous margin anyway.)

In full-range stereo music listening, without a subwoofer, the AVR 510 played very loud without distortion — almost as loud as the 150-watt-per-channel receiver I’d been using previously. Pushed too hard, however, it began sounding “hazy,” and when I forced it a couple of decibels further out, it distorted on large transients.

Performance with standard 5.1-channel material was first-class, as on the energetically mixed (and surprisingly good) soundtrack of the *Rocky and Bullwinkle* DVD (all right, all right, so it was family night at the Kumin residence . . .). The series of well-done helicopter flybys at the start of Chapter 8 were impressively tight and smooth in both the Dolby Digital and DTS soundtracks, as were the film’s innumerable sound and musical effects.

The receiver’s additional surround modes are all variations on ambience extraction as opposed to ambience synthesis — no artificial reverb is added. Among the most engaging are Logic 7 M (music) and Logic 7 C (cinema), intended for stereo music and surround-encoded TV sound or movie soundtracks, respectively. The two are similar, though with the music mode there was more ambience from the surround channels. With Logic 7 M, live acoustic music recordings were naturally spacious and vocals sounded excellent in the center channel, both contributing to a consistently believable front soundstage and a restrained but spacious surround. The music mode did a great job on studio recordings, too.

As far as playing MP3 files, Harman Kardon claims that the AVR 510 can convert MP3 data received at any of its digital





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LISTEN AND YOU'LL SEE



The AVR 510's performance was first-class with the energetically mixed Dolby Digital and DTS soundtracks of the *Rocky and Bullwinkle* DVD.

audio inputs to analog stereo audio. I was unable to test this because I couldn't find any component that could feed MP3 data in standard (SPDIF) digital audio format to the receiver. Neither of the two MP3-capable CD-R/RW recorders I tried would do it — and one of them was a brand-new Harman Kardon model! Not to worry. The company says that its forthcoming DAL 150 USB-to-SPDIF audio converter (\$119) will do the trick, but until then we'll just have to take its word for it.

The AVR 510's main remote control is densely filled, but the keys are thoughtfully arrayed and have a variety of shapes and sizes. Overall, I liked this handset a good deal — especially its Light key, which illuminates *every* button, almost all of which have function labels printed on top where you can see them. Another subtle but useful touch indicates that somebody actually gave ergonomic issues more than a passing thought in the remote's design. Dolby Digital night-mode dynamic-range compression is always available directly, in two levels, via a dedicated key. (Some manufacturers bury this useful feature beneath layers of onscreen menus.)

The remote's preprogrammed library worked fine on a Toshiba TV and an RCA DirecTV receiver, but none of its Sony-brand codes succeeded in operating my 3-year-old DVD player. Fortunately, its learning capability covers that sort of omission.

To pick a few nits: The important OSD key, for calling up the onscreen display, is buried below the ten numeric keys, and the mute key is up in the corner, four rows away from the volume arrows. If you switch the remote to control another component, none of the receiver commands remain ac-

tive — not even volume and mute — unless you program a "punch-through" command for them. (You can also program punch-through commands in the opposite direction for channel up/down and DVD/CD transport controls.)

Harman Kardon's midprice AVR 510 is clearly targeted to people who are serious about home theater. It has fewer bells and whistles than many other receivers in its price range, but all the important stuff is there: Dolby Digital, DTS, an excellent all-purpose surround mode for music, another for stereo or surround-encoded TV or movie sound, a well-thought-out remote control, and outstanding input/output and expansion options. One omission is 6.1-channel decoding, but we're just beginning to encounter this in midprice receivers, and it's certainly not something most people are concerned with given the relatively

## HIGH POINTS

Very good amplifier performance.  
Flexible full-system remote control.  
Excellent Logic 7 surround mode  
for stereo music.  
Automatic channel balancing.  
Front-panel A/V and digital audio  
inputs can double as record outputs.

## LOW POINTS

No 6.1/7.1-channel operation.  
No video for remote-zone output.  
Worse AM performance than usual.

small number of DVDs that have Dolby Digital Surround EX or DTS-ES soundtracks. In nearly all respects, the AVR 510 is thoughtfully designed, and its 5.1-channel excellence is beyond dispute. **S&V**

## in the lab

### DOLBY DIGITAL PERFORMANCE

All data were obtained from Dolby Labs' Dolby Digital test DVD using dithered test signals, which set limits on measured distortion and noise performance. Reference input level is -20 dBFS, and reference output is 1 watt into 8 ohms, obtained with the volume control set to -7 dB. All are worst-case figures where applicable.

#### Output at clipping (1 kHz, 8 ohms)

one channel driven ..... 123 watts (21 dBW)  
one channel driven (4 ohms) ..... 185 watts  
five channels driven ..... 74 watts (18.75 dBW)

#### Distortion at 1 watt (THD+N, 1 kHz)

8/4 ohms ..... 0.05/0.06%

#### Noise level (A-wtd, 16-bit data)

..... -69.8 dB

#### Excess noise (with sine-wave signal)

16-bit (EN16) ..... 6.6 dB

#### Frequency response

all channels ..... 20 Hz to 20 kHz +0.1, -0.15 dB

#### Subwoofer-output frequency response

18 dB/octave above -3-dB point of 82 Hz

#### High-pass-filter frequency response

12 dB/octave below -3-dB point of 80 Hz

#### Maximum subwoofer output (from 5.1-channel, 31-Hz signal at reference volume setting)

..... 9.2 volts

#### Subwoofer distortion (from 5.1-channel, 31-Hz, 0-dBFS signal; master-volume at reference level; subwoofer trim set to 0)

..... 0.95%

### STEREO PERFORMANCE, DIGITAL INPUTS

Volume setting for reference output level was -7 dB. Speakers were set to "large," subwoofer off.

#### Output at clipping (1 kHz, both channels driven)

8 ohms ..... 118 watts (20.75 dBW)

4 ohms ..... 158 watts

Distortion at 1 watt (THD+N, 1 kHz, 8/4 ohms) ..... 0.03/0.03%

Linearity error (at -90 dBFS) ..... 1.25 dB

Noise level (A-wtd) ..... -74.5 dB

Excess noise (with/without sine-wave signal)  
16-bit (EN16) ..... +1.25/+1.25 dB  
quasi-20-bit (EN20) ..... +14.9/+15 dB

Noise modulation ..... 0.6 dB

#### Tone-control range

100 Hz ..... +9.9, -9 dB  
10 kHz ..... +9.7, -9.4 dB

#### Frequency response (tone controls off)

20 Hz to 20 kHz +0.3, -0.2 dB

### TUNER PERFORMANCE

All figures FM only except frequency response.

#### Sensitivity

(50-dB quieting, mono/stereo) ..... 21.2/41.9 dB

Capture ratio (at 65 dBf) ..... 1.5 dB

#### Selectivity

(alternate/adjacent channel) ..... 58.6/6.4 dB

#### Noise level

(at 65 dBf, mono/stereo) ..... -71.9/-66.6 dB

#### Frequency response

FM ..... 20 Hz to 15 kHz +1.2, -1.6 dB

AM ..... 58 Hz to 3.18 kHz +1.0, -6.0 dB

The AVR 510 easily exceeded its specified power with one or two channels driven and more modestly with five channels driven. Other results were about what we expect in this price range (very fine), with one curious exception: in Dolby Digital mode, the front left/right channels were a few decibels noisier than the other three channels. FM weak-signal reception was only mediocre, and AM reception was poor. — D.K.



# Hitachi

## DZ-MV100A DVD-RAM Camcorder



**F**ew would argue that digital MiniDV camcorders aren't high-tech marvels. But they still use yesterday's technology — tape. Sure, you can download the video to a PC or make archive copies of the recordings. But you'd better be diligent about it, because videotapes *will* deteriorate over time. Tape just isn't anywhere near as durable or convenient a medium as optical disc.

The obvious choice for the next generation of digital camcorders is recordable DVD — and it's finally here. Hitachi's DZ-MV100A, the first camcorder to record on an optical disc, stores MPEG-2 movies and JPEG still photos on a 3-inch DVD-RAM disc. In case you haven't heard, DVD-RAM is one of two rewritable formats endorsed by the DVD Forum, the industry group responsible for developing and maintaining the DVD format. DVD-RAM's strongest backer is Panasonic, which has a line of computer drives and a stand-alone recorder, the DMR-E10 (reviewed in December 2000). There are other proposed recordable and rewritable DVD formats,

all incompatible with DVD-RAM. They include DVD-R/RW, both also endorsed by the DVD Forum, and DVD+RW, backed mainly by Philips and RCA.

When video is stored as digital data, it can be accessed and manipulated instantly and effortlessly. The Hitachi camcorder boasts random access to video scenes (no tape winding), thumbnail index shots for locating particular scenes, and easy onboard editing. That's the good news.

The bad news can be summed up in a word: incompatibility. Don't expect to pop a disc fresh from the cam into your current DVD player. And unless your computer has a DVD-RAM drive that conforms to the format's Book 2.1 standards (still rare), you'll have to rely on the supplied USB connector — and that's guaranteed to work only for downloading still images. There's no IEEE 1394 (a.k.a. FireWire or i.Link) port for transferring video, an unfortunate omission. (Hitachi says you *may* be able to transfer video clips via USB, but even then, the camera's .vro file format is not yet supported by most editing software.)

The compact DVD-RAM cam doesn't look particularly futuristic. The power and record buttons face you, within easy reach of your thumb. The zoom control and snap button (for still shots) are on the top. A 0.44-inch color viewfinder pivots up from the top and a 3 1/2-inch color LCD viewscreen swivels out from the cam's left side. The disc compartment on the right side is

### fast facts

#### KEY FEATURES

- Records MPEG-2 video on 3-inch DVD-RAM discs
- 3 1/2-inch color viewscreen
- Instant access to recorded video
- Frame-by-frame playback
- Disc Navigation System for onboard editing

**DIMENSIONS** 7 1/4 inches wide, 4 1/4 inches high, 3 inches deep

**WEIGHT** 1 3/4 pounds; 2 pounds with battery

**PRICE** \$2,000

**MANUFACTURER** Hitachi America, Dept. S&V, P.O. Box 3900, Peoria, IL 61612; [www.hitachi.com](http://www.hitachi.com); 800-448-2244

# test report

about an inch deep, 6 inches long, and 4 inches tall. Apparently, it's meant to be noticed — the compartment is matte black, while the rest of the camcorder is silver-toned.

Press the eject button, and the disc is presented in a protective caddy that looks something like a computer diskette. Each disc can hold about 30 minutes of video on each side in Fine mode (704 x 480 pixels). Standard mode (352 x 480 pixels) doubles that time, but if you're buying a digital camcorder, I doubt you'll be satisfied with the resolution. In Photo mode, you can fit 1,998 still images with a resolution of 1,280 x 960 pixels on one double-sided disc. Maxell manufactures the DVD-RAM blank discs, which sell for about \$30 each (one double-sided disc is supplied with the cam) and are rated for 100,000 rewrite cycles.

Even when you begin recording movies, there's not much that's obviously radical about the Hitachi cam. It does weigh more than most compact camcorders — enough so that extended recording sessions made my wrist tired. One other difference: there's about a 10-second wait when you power up. "Disc access" is displayed while the camcorder examines the disc's table of contents. When the message disappears from the viewfinder, you're ready to roll.

The Hitachi DZ-MV100A offers the features you'd expect on a high-end digital camcorder. The LCD screen is large and bright, and there's a digital electronic image-stabilization system as well as a 12x optical/48x digital zoom. It also has a built-in flash that allows you to take snapshots in dark places, but it can't be used as a video light.

Controls to manually adjust the focus and exposure, select a preprogrammed autoexposure (AE) mode, and access menu functions are below the viewfinder and must be operated with your left hand. A small wheel just below those buttons is used to scroll through and select various options. For example, once you hit the AE button, you use the wheel to scroll through the AE modes (Portrait, Sports, Spotlight, Surf-and-Snow, and Full-Auto) and push the wheel in to make your selection.

The actual recording process is similar to what you're used to from conventional camcorders. One difference is that "Disc access" message, which pops up again for a second or two whenever you press record/pause or stop. Those two little words might seem insignificant, but they signal something new and exciting in the world of camcorders — something that becomes quite evident when you play your recordings. *You don't have to manually select the playback mode.* Just press the play button, and the cam automatically starts playing the last recorded segment. If that's not what you wanted to see, there are a couple of ways to find the scene you do want. Playback controls include both search buttons, for forward and reverse fast or slow-motion scanning or frame-by-frame movement, and skip buttons for moving ahead to the beginning of the next scene or back to the start of the previous one.

But it's cooler — and more fun — to use Hitachi's Disc Navigation System. The



necessary controls are revealed when the LCD is swung open. Press the lighted green Disc Navigation button to bring up an onscreen index of thumbnail images, each representing the first frame of a recorded segment. A large, round, four-way cursor control lets you move through the images. It's a vast improvement over searching for scenes on videotape!

## HIGH POINTS

- Basic scene-combine/delete editing.
- Video stored on discs won't deteriorate over time.
- Random access for both playback and recording.

## LOW POINTS

- Not compatible with most current DVD players or DVD-ROM drives.
- No IEEE 1394 computer port.
- Slightly heavy.

The digital fun is only beginning. Say you've been recording your wife teaching your son to ride a bicycle without training wheels. You take a break to review what you've recorded (and to give her a chance to catch her breath). Wouldn't you know that'll be when your son decides to try on his own — and succeeds!

You don't have to miss the moment. As soon as you hear, "Look at me, Dad!" you can press the record button and the camcorder will begin recording as soon as the 2-second "Disc access" message disappears. There's no need to fast-forward to a blank segment of tape, then switch to record mode. And you never have to worry about accidentally recording over footage. That's what random disc access is all about. It's quick, it's easy, and it requires no work at all on your part.

Record a scene that's too long or one you wish you hadn't? Not to worry. The

DVD-RAM cam allows you to divide a scene in two

to extract unwanted parts — very similar to MiniDisc editing. Using the Disc

Navigation menu, select Scene and then Divide.

Play the scene, and press enter at the point of division. Now you can delete

the unwanted track you just created. Use the divide feature at the

beginning and end of a bad section to isolate it for deletion, then "splice" together the remaining scenes, perhaps using special effects such as wipe or fade-to-white to smooth the transition.

The ability to do such easy onscreen edits will greatly enhance your video productions. But the DZ-V100A performs other

SOMETIMES INNOVATION COMES  
FROM THINKING INSIDE THE BOX.

neat playback tricks, too — ones you could never do with tape. You can play a scene in an endless loop, arrange the scenes in any order you like, and make your own playlists.

For me, the convenience of those onboard editing capabilities is offset by the camcorder's lack of a digital video output — at least until compatible DVD-RAM drives and editing software become commonly available. For now, I'll wait to see how the format wars play out before plunking down my own money for a DVD camcorder of any flavor. But I'm very glad to have had the chance to live with Hitachi's DZ-MV100A. Easy, convenient, and fun to use, it offers a tantalizing glimpse into the not-so-distant future of digital recording. Even nontechies will feel comfortable recording and editing video on it. As for you early adopters, what are you waiting for?

S&V

## in the lab

### VIDEO PERFORMANCE

All measurements were made through the camcorder's composite-video output except where indicated.

#### Onscreen horizontal resolution

camera.....	400 lines
viewscreen/viewfinder.....	300/300 lines
VCR (Fine/Standard).....	450/300 lines

#### Noise, record/play (Fine/Standard)

S-video luminance (wtd).....	57.0/54.1 dB
chrominance AM.....	58.8/61.6 dB
chrominance PM.....	47.4/48.2 dB
luminance (wtd).....	55.8/53.6 dB

**Minimum illumination (EIA method)**  
18.9 lux

### AUDIO PERFORMANCE

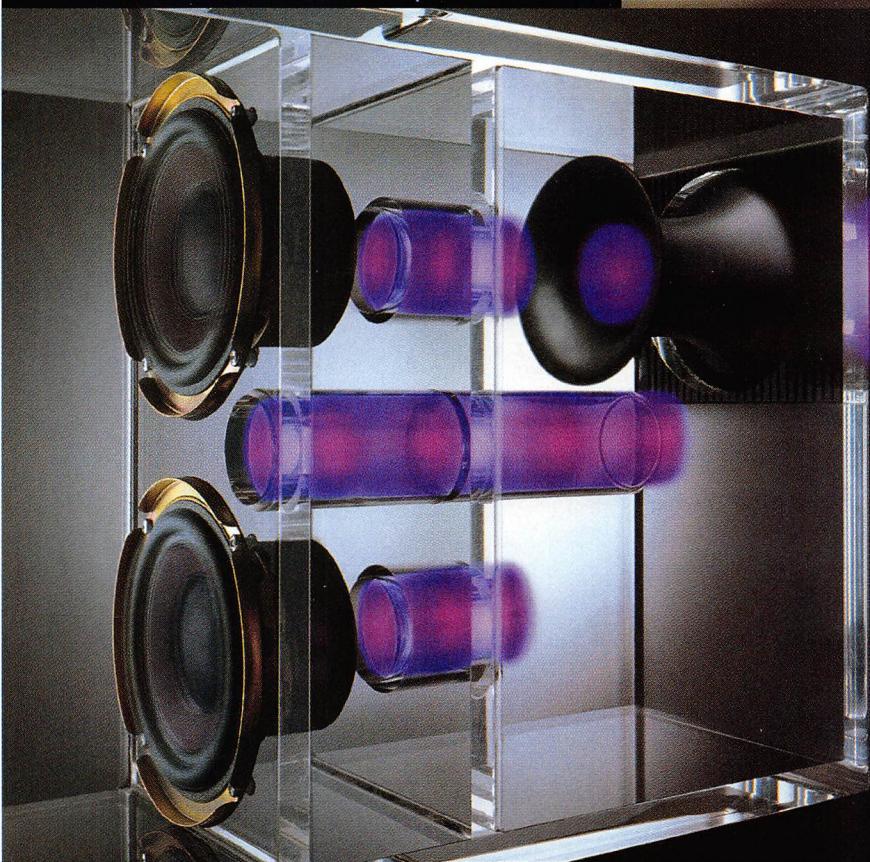
Measurements were made using a test signal fed through the external-microphone and line-level A/V inputs and monitored via the camcorder's A/V output.

**Frequency response** (both inputs)  
20 Hz to 4.0 kHz +0, -3 dB

**Noise level** (A-wtd, re output at input level, mic/line).....-64.6/-65.5 dB

The Hitachi DZ-MV100A's resolution and noise levels were both good, if not equal to the best DV-format camcorders we've tested. The camera was not, however, all that sensitive in low-light situations. Even on the line-level inputs, the audio frequency response slowly rolled off above 1 kHz. This will lend a slight degree of dullness to audio dubs, but not necessarily to microphone recording, where response anomalies will be dominated by the microphone characteristics.

— David Ranada



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# Energy Take 5.2 Home Theater Speaker System



When this magazine's predecessor, *Stereo Review*, evaluated Energy's Take 5 system some four years ago, micro-size home theater speaker systems weren't too common. We were more than a little impressed that the Take 5's tiny satellite speakers and 8-inch powered subwoofer could produce a well-integrated, dynamic, tonally "right" sound from surround and stereo sources alike. Four years is an eternity in this business, and for a speaker system to survive that long unchanged is a sure sign that plenty of folks have felt the same way — and proved it by plunking down their dollars. Nevertheless, in the world of home theater, change is as inevitable as hyperbole, and the Take 5 system has now been supplanted by — ta da! — the Take 5.2.

Had it been up to me, this \$900, five-speaker-plus-subwoofer suite would be called the Take 6, but I can understand why

Energy would pass over a name that might suggest 6.1-channel capabilities. Anyway, this year's model is very similar to the original, but the five satellites, which arrive

packed in a single carton, are snazzier and slightly larger. They're also vented instead of sealed and have larger, 1-inch aluminum-dome tweeters along with their 3½-inch woofers.

The Take 1.2 center speaker has two of the woofers, and the four Take 2.2 left/right satellites have one each. As in several competitive systems I've seen lately, the finish of the satellite enclosures is exceptional for the price. Gloss-black lacquer flanks curvaceous, playfully bulbous grilles, with multiway binding posts seamlessly inset in the back of each speaker. The Take 2.2 satellites also incorporate a nifty tilt-and-swivel fixture that clips onto the supplied wall-mount brackets or to the top of optional Take 5.2 stands, which can be had for \$75 a pair.

The updated S8.2 subwoofer furnishes the same heavy-duty connectors for all four of its speaker-level input and output terminals. (That's great, because I hate fiddling with the cheesy spring-clip terminals you find on some subs in this price range.) It also includes two line-level RCA input jacks labeled Xover and Input — which can be a bit confusing since the manual doesn't use the same names consistently. The Xover input bypasses the sub's crossover and level controls.

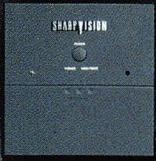
Those controls are on the front, making

## fast facts

	TAKE 2.2 (L/R satellites)	TAKE 1.2 (center)	S8.2 (subwoofer)
<b>TWEETER</b>	1-inch aluminum dome	1-inch aluminum dome	—
<b>WOOFER</b>	3½-inch cone	two 3½-inch cones	8-inch cone
<b>POWER</b>	—	—	100 watts
<b>ENCLOSURE</b>	vented	vented	vented
<b>DIMENSIONS (WxHxD)</b>	4 x 7 x 7½ inches	11 x 4½ x 6¾ inches	9¾ x 16½ x 12½ inches
<b>WEIGHT</b>	3½ pounds	5½ pounds	24 pounds
<b>FINISH</b>	gloss black	gloss black	black ash vinyl
<b>PRICE</b> (Total: \$900)	\$600 for two pair	not available separately	\$300

**MANUFACTURER** Energy Loudspeakers, Audio Products International, Dept. S&V, 3641 McNicoll Ave., Toronto, Ontario M1X 1G5; [www.energy-speakers.com](http://www.energy-speakers.com); 416-321-1800

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them more convenient to adjust, but also subject to inadvertent resetting by vacuum cleaners, dogs, and other low-slung creatures (especially the two-legged variety). Also up front is a single toggle switch labeled A for audio and V for video. The video setting kicks in a fairly prominent boost around 45 Hz — in case the average action-film soundtrack doesn't already have enough boom for you! The tradeoff is a substantial sacrifice in deep bass below about 40 Hz.

Energy recommends connecting the Take 5.2 system using the line-level subwoofer output of an A/V receiver or processor instead of speaker-level hookups via the sub. I tried it both ways and found only slight differences between them using a "large" speaker setting and a standard 80-Hz crossover. However, my B&K AVR307 receiver's crossover is infinitely adjustable, with selectable slopes, so I did some experimenting. I found that setting the front L/R speakers to "small" with a crossover frequency of 95 Hz and slopes of 12 dB per octave in both directions yielded clearly superior sound in my room, with better dynamics, enhanced midrange definition, and no penalty in sub/sat blending.

Since most people who buy the Take 5.2 system won't have the luxury of such a flexible crossover, I did most of my listening with the basic speaker-level hookup, setting the crossover frequency and output level using the subwoofer's controls. I also left the sub's mode switch in its more accurate audio position.

Once hooked up and sorted out, Energy's Take 5.2 system reproduced two-



**The Energy Take 5.2 speaker system excelled with movie soundtracks. Dialogue was clear, intelligible, and precisely balanced in the military courtroom drama *Rules of Engagement*.**

idea to place *any* subwoofer behind the main listening position — the Take 5.2 setup suffered less from subwoofer localization and sub-sat "disconnection" than many small systems I've evaluated.

Overall balance was engagingly open, with a hint of top-octave reticence — a high-hat cymbal's "ticky-tick-tick" was just a hair less prominent and had a touch less "air" than on my (vastly more expensive) reference speakers. I also noted an occasional slight vocal-range narrowing. This midrange effect was evident as a vague coarsening, or barely perceptible distancing, of male voices, such as Jakob Dylan's warm baritone on the Wallflowers'

sophomore Warner Bros. effort, (*Breach*).

Stereo imaging was terrific all-around: the Take 5.2 put up a real audiophile-style "floats-in-the-air" soundstage for simple, well-recorded two-channel material, like the piano-and-vocal opening bars of Natalie Merchant's "Life Is Sweet" from *Opheelia* (Elektra). The system's bass extension was remarkable given the 8-inch driver in the sub, which produced an honest 32 Hz with reasonable punch and good definition at relatively modest volumes. Performance like this will let you appreciate music and

movies that actually include some true deep bass in a way most pint-size subs do not.

You won't get the real chest smack of 20-Hz pressure waves from T-Rex footfalls in *Jurassic Park* — I don't care how good your engineering is, for that you need a honkin' big subwoofer — but at least you'll hear the correct tonal balance. I applaud Energy for designing its little sub to favor accurate, extended bass over boom. And if you happen to *want* boomier bass, you can always flip the front-panel switch to its video position.

Bottom-octave bass aside, the Take 5.2 system plays ridiculously loud for such a bantamweight (remember — each satellite is about the size of a box of Pop-Tarts). That said, like every other system with 3½-inch woofers I've evaluated, it couldn't reach concert-hall levels, or even concertlike ones, in stereo playback. The front L/R satellites announced their low-frequency dynamic limit with a mild "Thwop!" on kick-drum beats and the like. With typical pop music, this was masked at first by the subwoofer's output, but it became obvious as I cranked up the volume. And yet, despite repeated excursions into this danger zone, I failed to damage a single satellite.

Of course, surround-encoded music and movie soundtracks enjoy an advantage of several decibels in dynamic potential by having five satellite speakers pumping air instead of only two. The system was able to play quite a bit louder on multichannel rock recordings before the sound became

## The Energy Take 5.2 system could play ridiculously loud for such a bantamweight.

channel music with impressive accuracy. The low end was solid and refreshingly free of the bass and lower-midrange anomalies that plague so many compact sub/sat arrays. I had no trouble achieving an excellent blend between the S8.2 sub and the Take 2.2 satellites with either wiring scheme. While I wouldn't go so far as to put the S8.2 behind me — it's not a good

noticeably muddy. We're not talking concert levels here, but plenty loud for a cozy room of 12 x 16 feet or so.

For its part, the S8.2 sub never sounded stressed-out thanks to dynamic "smart" limiting of its low-pass-filtered signals, but I did notice a sort of bass-sustain effect on bass-rich music — like "Frozen Charlotte" from the Merchant recording — played at extremely high volumes.

The Take 5.2 setup excelled with movie soundtracks. Dialogue was clear, intelligible, and precisely balanced — the little Take 1.2 center speaker did a good job. Tonal matching between the center speaker and the front left/right pair was very good on both voices and instruments, as close as I've heard from any inexpensive system with mini satellites. The center channel even seemed to have a bit less of the off-axis "honk" I usually hear from horizontally oriented center speakers with dual woofers. All this added up to seamless front soundstage imaging and incredible realism in dramatic pans, like the helicopter scenes

HIGH POINTS	
Accurate balance with fine imaging.	
Good sub/sat integration.	
Surprisingly extended bass.	
Nicely finished, nifty mounting system.	
LOW POINTS	
Volume won't break any leases.	
Hookup and crossover instructions may be confusing.	

near the beginning of *Rules of Engagement*. While I prefer the more diffuse envelopment provided by my usual dipole surround speakers, the Take 2.2s functioned well enough in that capacity.

Overall, Energy's Take 5.2 is one of the best ultracompact home theater speaker systems I've heard so far, and at the price it's a stone-cold steal. If you're looking for a system as small as possible and your budget is about \$1,000, the Take 5.2 is hard to beat.

S&V

## in the lab

**FREQUENCY RESPONSE** (at 2 meters)  
front left/right.....110 Hz to 16.3 kHz ±4.5 dB  
center.....110 Hz to 17.4 kHz ±4.5 dB  
surround.....110 Hz to 13.2 kHz ±3.2 dB  
subwoofer.....32 Hz to 100 Hz ±2.6 dB

**SENSITIVITY** (SPL at 1 meter with 2.8 volts of pink-noise input)  
front left/right .....89 dB  
center .....90 dB  
surround .....89 dB

**IMPEDANCE** (minimum/nominal)  
front left/right .....4.3/9 ohms  
center .....6.7/8 ohms  
surround .....4.3/9 ohms

**BASS LIMITS** (lowest frequency and maximum SPL with limit of 10% distortion at 2 meters in a large room)  
front left/right.....80 Hz at 77 dB SPL  
center.....80 Hz at 81 dB SPL  
surround.....80 Hz at 77 dB SPL  
subwoofer.....25 Hz at 82 dB SPL

97 dB average SPL from 25 to 62 Hz  
104.0 dB maximum SPL at 62 Hz

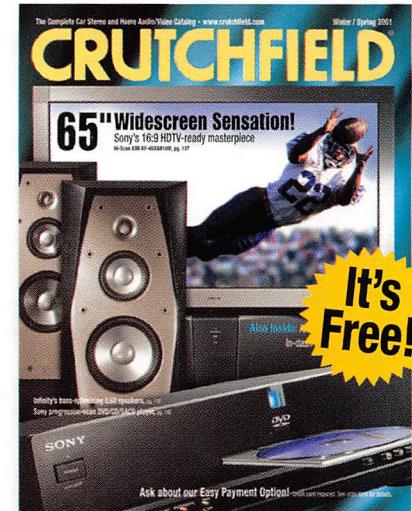
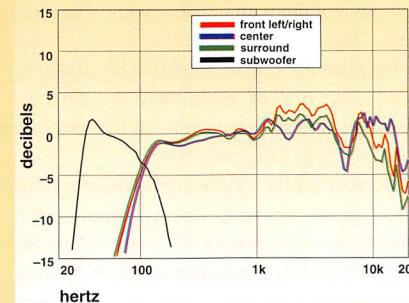
All of the response curves in the graph are weighted to reflect how sound arrives at a listener's ears with normal speaker placement. Because the Take 2.2 is used for both the front left/right and surround channels, the differences in the curves primarily reflect the different weightings.

The Take 2.2 had a buildup of energy between 1 and 5 kHz followed by some roughness at higher frequencies. The Take 1.2 center speaker had a similar character but was

smoother at high frequencies. While the vertically oriented Take 2.2's frequency response became smoother off-axis, the horizontally oriented Take 1.2 developed a wide, 3-dB trough between 1.5 and 7 kHz at 22.5° off-axis, and its response became even more irregular at larger angles.

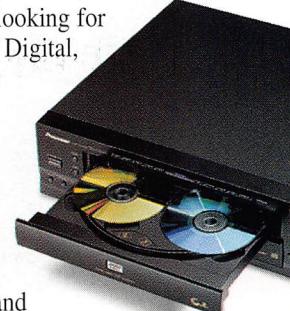
Bass limits for the S8.2 subwoofer were measured with it set to maximum bandwidth and placed in the optimal corner of a 7,500-cubic foot room. In a smaller room users can expect 2 to 3 Hz deeper extension and up to 3-dB higher sound-pressure level (SPL). The S8.2 had relatively limited low-frequency SPL capability, as you'd expect from a subwoofer that has an 8-inch driver, but respectable extension — down to about 30 Hz. The unmarked crossover-frequency dial had a turnover frequency of 100 Hz at the upper end of its rotation, 75 Hz at noon, and 60 Hz at the bottom end, with an approximate slope of 18 dB per octave.

— Tom Nousaine



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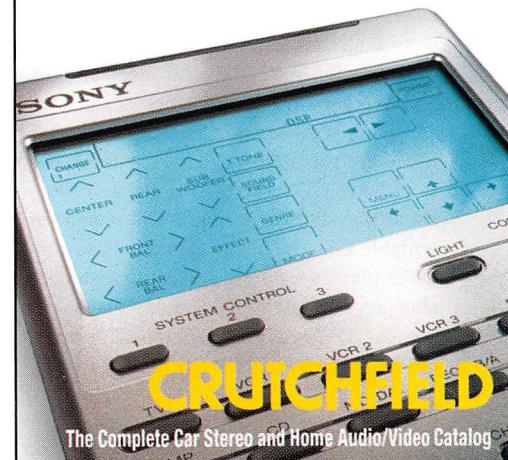


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# Denon

## DVD-2800 DVD-Video Player



The final frontiers of standard (NTSC) video are rapidly being explored and conquered by the latest DVD-Video players. It's now possible for an inexpensive DVD player to have video performance on par with one costing several times as much as well as excellent analog audio performance. There's not a lot of room for the manufacturers to improve them further.

One area that is getting attention now is a progressive-scan component-video output — one of the principal features of the Denon DVD-2800. A growing number of players support this best-of-all-possible-connections output, which can deliver — if used with a compatible TV — an extremely smooth and filmlike video image that's substantially free of the scan lines you get with regular "interlaced" video.

The player also has the uncommon ability to play compressed MP3 audio files stored on a CD. With this comes the capacity to play both write-once CD-R and rewritable CD-RW discs, something not all DVD players can do. Besides the switchable progressive/interlaced-component output, the DVD-2800 has outputs for composite- and S-video, for optical and coaxial

digital audio, and for stereo analog audio, but only one connector or set of connectors for each one. Like many players, the DVD-2800 lacks a headphone output.

The remote control Denon provides fits comfortably in the hand, and its buttons are nicely differentiated in color, shape, size, and placement. The molded depressions and raised areas around the buttons in the top half of the remote make it easier to find your way around by feel.

But even after some practice, I found myself hitting the (viewing) angle button quite often when I really wanted to press the enter key, which is too small and in quite an unusual position — directly below the four big cursor buttons. And the two buttons for forward and reverse chapter/track skip are one above the other, instead of beside each other as usual. This arrangement, like that of the slow/fast-scan buttons on the opposite side of the remote, takes some getting used to.

Hookup of the DVD-2800 was uneventful. I gave the component-output video connections a workout that was more involved than usual because when the player was unveiled at last January's Consumer Electronics Show, Denon made a big deal

about its incorporating Silicon Image's SiL503 chip set. Denon's player is the least expensive one incorporating these chips, which are thought by some to deliver the best conversion performance from nonproprietary ICs.

For the most part, the Denon player's scan conversion — which includes 3:2 pulldown to compensate for the frame-rate difference between video and film — lived up to the chip set's reputation. To test the quality of a progressive-scan display, I use a segment from the computer-graphics movie *Tron* (Chapter 13): a "lightcycle" race on a background of glowing grid lines that whirls across the screen. (This sequence

### fast facts

#### KEY FEATURES

- Progressive-scan component-video output with 3:2 pulldown film mode
- Can play MP3 files on CD-R/RW discs

**DIMENSIONS** 17½ inches wide, 5½ inches high, 13 inches deep

**WEIGHT** 15½ pounds

**PRICE** \$799

**MANUFACTURER** Denon Electronics, Dept. S&V, 19 Chapin Rd., P.O. Box 867, Pine Brook, NJ 07058-9777; [www.del.denon.com](http://www.del.denon.com); 973-396-0810

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—Robert Deutsch, *Stereophile*, Vol. 23 No.6, on the Studio/100



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# test report

## HIGH POINTS

Mostly fine progressive-scan video behavior.  
Fine bench-test performance.  
MP3 playback supports high bit rates.

## LOW POINTS

Progressive-output anomalies.  
Unusual remote-control layout.

alone could convince you that you need a progressive-scan video system to experience DVD movies at their best — see “Improving Your Image,” May, page 101.) The Denon DVD-2800 made those moving grids look solid, with nary a trace of the breakup produced by some players. And the player never visually stumbled with a variety of other DVD movies, either, in places that trip up many other progressive-scan players.

On the other hand, the Denon DVD-2800 seemed to have a problem with what's called chroma upsampling. The nature, if not the origin, of this weird effect was readily apparent in the first galley-slave scene of *Ben-Hur* (Chapter 19), in which Consul Quintus Arrius first arrives on the ship carrying Judah Ben-Hur. Like most of the Roman soldiers, Arrius here wears a uniform cape that's a highly saturated red (in later scenes his cloak is purple). The red cape draped across his shoulders forms a nearly horizontal line and thus a very sharp vertical color transition. With Denon's progressive-scan processing turned on, I could sometimes see a faint phantom red shoulder line floating just above the cape through this scene, an effect that vanished when I reverted to interlaced playback.

An even more noticeable example occurred near the beginning of Chapter 4 in the DVD of the first *Toy Story*. The red lid of the Tinkertoy box that serves as Woody's lectern looked streaky, which produced jabs of color off to the sides of the lid. The streaking was also apparent around the edges of Woody's bright red microphone. These effects were so obvious that I checked this passage on two different TVs to make sure it wasn't some sort of monitor-player interaction. It wasn't. In each case the effects

disappeared when I switched back to the interlaced output.

This color-streaking phenomenon is quite common with progressive-scan DVD-player outputs. Unfortunately, it'll be hard to eliminate entirely until an improved generation of MPEG video-decoder chips becomes generally available. I compared the DVD-2800 with two other players, both considerably more expensive, and it came in third. One player (which lists for \$3,000) had no trace of the effect, and the other's color streaking was far less prominent than the DVD-2800's.

The Denon player also seemed to produce images that were a little “soft.” This is almost certainly a consequence of its slowly rolled off luminance frequency response, as suggested by a direct comparison with a player whose luminance response is essentially dead-flat. The effect on movies was very subtle, however, and most viewers won't even notice it.

The video performance of the Denon DVD-2800 was excellent in three of its



The Denon DVD-2800 player's progressive-scan processing had trouble with highly saturated colors, like the red in the soldiers' capes in many scenes of *Ben-Hur*.

four output modes: composite video, S-video, and standard interlaced component video. However, the mode that is presumably of most interest to prospective buyers — progressive-scan component video — while also excellent in most respects, was not perfect. Scenes with bright, saturated colors, in particular, had visually distracting problems. And while the effect was subtle in most movies I viewed, it was still frequently visible. For the price, however, this is probably the best progressive-scan performance available now. This is clearly an area where . . . ah, progress can still be made.

SBW

## in the lab

### DVD-VIDEO PERFORMANCE

Measurements were made from a variety of DVD test discs, all through the player's composite-video output except as noted.

**Maximum white level** ..... ±0 IRE

**Setup level** ..... +7.5 IRE

**Differential gain** ..... 1.6%

**Differential phase** ..... 0.7°

#### Luminance frequency response

(re level at 1 MHz)

at 4 MHz ..... -0.6 dB

at 5 MHz ..... -0.9 dB

at 6 MHz ..... -3.0 dB

at 6.75 MHz (DVD limit) ..... -4.2 dB

**Onscreen horizontal resolution** ..... 540 lines

**Pixel cropping** ..... left 6, right 1, top 0, bottom 0

**In-player letterboxing** ..... fair

#### Component-output level error

(Y/P<sub>r</sub>/P<sub>b</sub>) ..... +3.9/-2.0/-1.4%

#### Component-output timing error

(P<sub>r</sub>/P<sub>b</sub>) ..... 0/+2 nanoseconds

### CD AUDIO PLAYBACK

All tests except defect tracking were made with

**Sound & Vision**'s test CD-RW. All test signals

contain dither, which limits noise and distortion performance.

**Maximum output** ..... 2.3 volts

#### Frequency response

20 Hz to 20 kHz +0.06, -0.26 dB

**Noise level** (re -20 dBFS, A-wtd) ..... -75.5 dB

**Excess noise** (without/with sine-wave signal)

16-bit (EN16) ..... +0.35/+0.35 dB

quasi-20-bit (EN20) ..... +9.9/+9.9 dB

**Distortion** (THD+N, 440 Hz)

at 0 dBFS ..... 0.011%

at -20 dBFS ..... 0.021%

**Linearity error** (at -90 dBFS) ..... -0.1 dB

**Noise modulation** ..... <0.25 dB

#### Defect tracking

(Pierre Verany test disc) ..... 1,500 µm

With one exception, the lab measurements for the Denon came out uniformly excellent. Of particular note are the unusually accurate component-output results as well as the single-digit EN20 figures. In-player letterboxing was also better than what we normally see, though not quite equal to the best available. MP3 playback performance was good enough to be limited in every parameter by errors introduced in the encoding process. Luminance frequency response proved to be the exception. The measured rolloff, which matches the rated video frequency response on Denon's data sheet, did not affect the result of our onscreen resolution test, but it did make the image look a tad “soft” in direct comparison with a player that has flatter response.

— D.R.



# Cambridge SoundWorks

## Newton Theater MC300 Speaker System



**C**ambridge SoundWorks' Newton Series was likely named for the town where CSW is based, but the Newton Theater MC300 system recalls the great physicist who first encompassed the diverse movements of heavenly and terrestrial objects in a single theory. The Newton Theater speakers ingeniously accommodate themselves to almost any room and to both movie-centric and music-focused listening preferences. Besides being compact and offering a wide variety of mounting options, they allow you to tune the sound to your taste.

The package — one of several Newton Theater combinations — comprises three MC300 front satellites, a pair of S300 surrounds, and a P1000 powered subwoofer. The MC300 is a fairly ordinary two-way speaker with a couple of 4-inch woofers and an attractive plastic enclosure that's slightly bowed in and tapered at the rear. Its back panel sports recessed, gold-plated binding posts whose holes are big enough to accept heavy-gauge speaker cable.

The real star of this show is the versatile

S300 surround speaker. Its half-round enclosure is designed to be placed on the side walls of a home theater, and it has four drivers: a centrally mounted 4-inch woofer

and 1-inch tweeter, which fire straight out toward the listener, and two 2½-inch mid-range cones at either end, which fire toward the front and rear of the room. The S300 has another feature that's relatively uncommon. A large rotary switch on the bottom of the cabinet (or the top, if you prefer) lets you select a direct, dipole, or bipole radiation pattern. Each setting has a somewhat different effect on the surround sound field (more on this later).

The P1000 subwoofer is out of the ordinary, too. Dual 10-inch drivers (on opposite sides) are powered by the efficient, 1,000-watt, Class D amplifier that's built in, but the other electronics usually found in a powered subwoofer — and more — have been moved to an outboard control module. The controller, which you can place near the sub or with your other electronic components, as you prefer, has both line- and speaker-level inputs for all three front channels (in most cases the center-channel connection goes unused), a subwoofer-channel input, and line-level outputs with a high-pass filter fixed at 100 Hz.

You adjust the sub's level, phase, and crossover point from the control module as well as set the center frequency and boost/

### fast facts

	MC300 (L/C/R front)	S300 (surround)	P1000 (subwoofer)
<b>TWEETER</b>	1-inch dome	1-inch dome	—
<b>MIDRANGE</b>	—	two 2½-inch cones	—
<b>WOOFER</b>	two 4-inch cones	4-inch cone	two 10-inch cones
<b>POWER</b>	—	—	1,000 watts
<b>ENCLOSURE</b>	sealed	sealed	sealed
<b>DIMENSIONS</b> (WxHxD)	5 1/4 x 13 1/4 x 6 1/2 inches	11 x 7 x 5 3/4 inches	15 1/4 x 15 1/2 x 14 inches
<b>WEIGHT</b>	10 pounds	7 pounds	45 pounds
<b>FINISH</b>	slate-gray or white matte	slate-gray or white matte	slate-gray matte or mahogany or blond maple wood veneer
<b>PRICE</b> Package price: \$1,900	\$200 each	\$450 a pair	\$1,000

**MANUFACTURER** Cambridge SoundWorks, Dept. S&V, 311 Needham St., Newton, MA 02464; [www.hifi.com](http://www.hifi.com); 800-367-4434

# test report

cut level of the single-band parametric equalizer built into it. The equalizer can be used to adjust the bass response to taste or to compensate for problems caused by the room (usually a peak that makes the bass sound boomy).

The module connects to the sub by a supplied cable with telephone-style RJ-11 plugs at either end (two jacks on both the module and the subwoofer let you add a second sub). The controller's power supply is separate from the sub's, which is fine if you place them apart, but it may be awkward if the module's AC adaptor and the sub's power cord have to share a wall outlet. CSW provides a neat credit-card-size remote control to adjust the sub's output level from your listening position.

I installed the Newton Theater system with the three front speakers on stands about knee high, the left and right placed vertically and the center horizontally just below the 56-inch screen of my wide-screen rear-projection TV. I put the subwoofer halfway between the left and center front speakers, where subs usually sound best in my room, and hung the surrounds on the side walls about a foot behind the listening position. I powered the system with 100 watts per channel and fed the P1000 from the subwoofer/LFE output of my Lexicon DC1 surround processor.

*Midnight in the Garden of Good and Evil* (Warner), director Clint Eastwood's amusing mystery (from the best-selling novel) starring Kevin Spacey and John Cusack, proved an ideal test for the Newton Theater system. This dramatic travelogue of Savannah, Georgia, has it all — a loud jet plane, gunshots, breaking glass, dialogue from whispers to shouts, and plenty of music, ranging from jazz to pipe organ.

Spacey portrays Jim Williams, a man of impeccable manners but uncertain veraci-

ty. The speakers reproduced the DVD's Dolby Digital 5.1 soundtrack with similar manners. Unlike Williams, the P1000's low bass was honest, without the phony midbass punch many subs inflict on everything.

When a plane approached in an early scene, it sounded like the ear-shattering, roaring old Boeing 727 it was supposed to be and not one of those new, noise-abated Airbuses. The bass was no phantom dog, either. When Williams sat down at his pipe organ, I could hear those low pipes. And unlike some of the characters in the movie, the Newton Theater system was well balanced. Bass was solid and smooth, and the sub melded seamlessly with the other speakers.

Voices sounded full and solid, with a beguiling smoothness. In some ways they were almost *too* smooth and would have benefited from more articulation. If I found any sonic flaw with the Newton Theater speakers, it was a lack of airiness and openness — they sounded just a tiny bit muted at the high end. For example, when Johnny hurls a Wild Turkey bottle at Jim in a particularly charged scene, I could see the bottle shatter, but without much sonic sparkle.

What about that mode switch on the S300 surround? My reference theater system uses all THX-certified audio components, so I'm used to dipole surrounds. The first time I used the Newton Theater system for movie viewing, I switched the surrounds to their dipole setting, which sends a minimal-level signal to their center, direct-radiating drivers. As expected, the result was a diffuse, enveloping ambience in which the speakers seemed to disappear.

Then I switched between the direct and bipolar settings. The direct setting, which channels almost all of the signal to the center drivers, produced acceptable results, though the speakers occasionally called attention to themselves. I thought that the bipolar setting, which supplies nearly equal energy to all four drivers, produced the best surround effect — moderately diffuse but still very present.

To put it another way, in



The steamy southern drama *Midnight in the Garden of Good and Evil*, starring John Cusack (left) and Oscar winner Kevin Spacey, had everything needed to test the Newton Theater system's sonic mettle.

the dipole mode, the birds in the movie seemed to be chirping in the trees down the block — too far. In the direct mode, they were practically on my shoulder — too close. In the bipolar mode, they were chirping on the tree outside the window — just right. During musical scenes as well, I felt more inside the depicted performing environment with the bipolar setting, although the dipole setting also provided a decent illusion. (I feared *Lady Chablis* was going to proposition me personally during the cabaret scene.)

CSW suggests that different types of recordings may sound better with different settings of the S300's mode switch. To test this, I listened to familiar two-channel music using the Lexicon processor's synthesized Hall, Nightclub, and Church modes to provide a multichannel signal. The sound was not only preferable with the ambience processing, but the more diffuse sound field with dipole radiation from the surround speakers worked better in these cases than the direct or bipolar setting.

*The Dream Cast "Les Misérables" in Concert* (VCI), a DVD with a two-channel soundtrack, proved this even more conclusively. A "straight" playback sounded a bit flat, but setting the Lexicon to one of its synthesized music modes and the S300s to their dipole setting improved the sound's depth and breadth remarkably, without diminishing its front-stage focus.

The P1000 subwoofer's phase, crossover, and equalizer adjustments are tempting, and with a little patience, I was able to contour the sound to near perfection. (I didn't test the high-pass filtering since the Lexicon performed that chore.) And being able to adjust the subwoofer's level at any time from your easy chair is a nice perk.

*The Best of Sessions at West 54th, Volume 1* (CMI Legacy), a multichannel DVD, offers a feast of great popular music, including Suzanne Vega performing her own



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- True 75 Ohm Construction
- Lifetime Limited Warranty



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"Caramel" accompanied by electric bass. The P1000 delivered some of the most musical, natural-sounding low bass on that song that I've heard from a compact powered subwoofer. It had a rounded tonal quality without undue raspiness.

Turning off the TV, I spun some CD-Rs of performances recorded in my radio studio. The Newton Theater system accurately reproduced voices and the sound of the studio, although with perhaps a slight loss of high-frequency ambience. In any case, with this and other two-channel music, the system recreated a solid and precise stereo soundstage that never wavered.

Cambridge SoundWorks maintains its reputation with the MC300 Newton Theater system. Not only does it deliver every penny you pay in performance, but its ver-

## HIGH POINTS

- Customizable for room acoustics and taste.
- Accurate sound reproduction.
- Superb bass performance.
- Excellent value.

## LOW POINTS

- Sounds too smooth at times, lacking articulation.
- Could use a little more treble ambience.

satility and flexibility virtually ensure that it will sound as good in your room as it did in mine. This system may be small in size and modest in price, but it's a giant where it counts.

S&W

## in the lab

### FREQUENCY RESPONSE (at 2 meters)

front left/right	120 Hz to 16.4 kHz ±3.2 dB
center	120 Hz to 16.8 kHz ±3.2 dB
surround	105 Hz to 14.1 kHz ±4.8 dB
subwoofer	44 Hz to 100 Hz ±2.1 dB

### SENSITIVITY (SPL at 1 meter with 2.8 volts of pink-noise input)

front left/right	91 dB
center	91 dB
surround	88 dB

### IMPEDANCE (minimum/nominal)

front left/right	4.5/10 ohms
center	4.5/10 ohms
surround	4.3/12 ohms

### BASS LIMITS (lowest frequency and maximum SPL with limit of 10% distortion at 2 meters in a large room)

front left/right	62 Hz at 64 dB SPL
center	62 Hz at 64 dB SPL
surround	80 Hz at 78 dB SPL
subwoofer	20 Hz at 82 dB SPL
100 dB average SPL from 25 to 62 Hz	
107.0 dB maximum SPL at 62 Hz	

All of the response curves in the graph are weighted to reflect how sound arrives at a listener's ears with normal speaker placement. The MC300 front left/right speakers were averaged over a ±30° window, with double weight given to the most typical listening angle, 30°. The Newton Theater system uses an MC300 as the center speaker, and its response was averaged over ±45°, with double weight directly on-axis where the primary listener would sit. Because sound from surround speakers will have been reflected from room surfaces, response of the S300 surround speaker, using its direct setting, was averaged over a ±60° window, with double weight 60° off-axis. (Measurements using the dipole and bipole settings produced typical bidirectional response.)

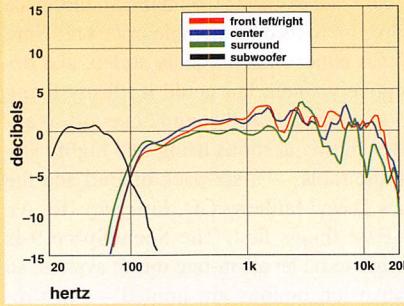
The MC300 had a rising midband response, with some roughness between 1.5 and 10 kHz,

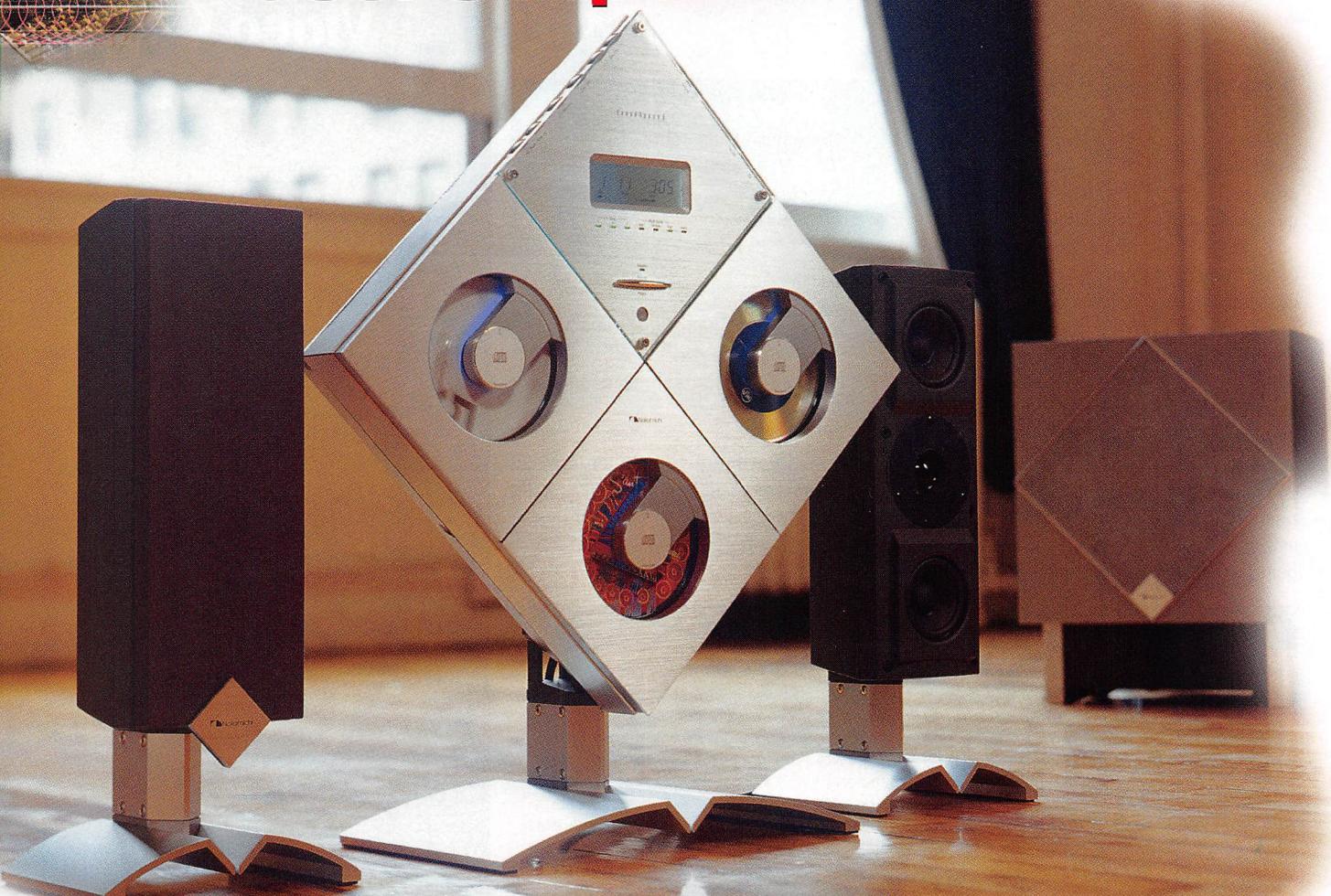
and falling response at extreme high frequencies. Surprisingly (and refreshingly), its response was basically identical whether the speaker was oriented vertically or horizontally (as it would be for use as a center speaker) — there was only a slight difference at 45° off-axis. The S300 surround speaker had significant irregularities above 2 kHz at all radiating angles and with all three mode settings.

Bass limits for the P1000 subwoofer were measured with its bandwidth set to maximum and the sub placed in the optimal corner of a 7,500-cubic foot room. In a smaller room, users can expect 2 to 3 Hz deeper extension and up to 3 dB higher sound-pressure level (SPL). The P1000 had relatively good output and low-frequency extension for a small sub. Its internal distortion-limiting circuitry, rather than acoustic overload of the driver/enclosure system, determined the maximum output level.

The crossover frequency was only 100 Hz at the marked 150-Hz setting but was fairly close to the marked frequency below 100 Hz. The bass-equalizer turnover frequencies were about 10 Hz higher than the 20-, 40-, and 60-Hz markings would imply, but the +6- through -6-dB gain settings were close to the dial indications. The deepest, flattest response (shown in the graph) was attained with the equalizer set to 20 Hz and +3 dB.

— Tom Nousaine





# Nakamichi

## SoundSpace 9 Music System

We were an odd couple from the get-go. Her: A high-end, two-channel music system fit for a well-coiffed executive. Me: A working slob with economy-class tastes. But even though she was pricey and seemingly out of my league, I was instantly infatuated with Nakamichi's \$3,500 SoundSpace 9.

I'm not a fan of flashy gear, preferring my audio equipment to be heard and not seen, but I'll admit to being sucker-punched by the SoundSpace 9. The system made a cool centerpiece for my living room. (It looked *fabulous* next to my post-modern futon and kitschy milk-crate bookshelf.) I don't believe you have to cough up a million bucks for a kick-ass music system, but sometimes you do get what you pay for.

There are plenty of terrific-sounding stereos you can buy for under a grand, but investing \$3,500 ought to give you both top-notch aesthetics *and* cutting-edge sonics. It's like buying an Accord vs. a 911 — both cars will get you to the beach, but only one is a sure-fire bikini magnet.

So I had to know: Could the SoundSpace 9 live up to its considerable price tag? Sure it was handsome, uniquely styled, and deceptively small, but could it fill my living room with rich, full sound? I set off to answer these questions using two highly scientific tools — a six-pack of Bud and the new Dave Matthews CD, *Everyday* (RCA).

First things first: The SoundSpace 9 is meant to be an all-in-one music system, so expansion options are limited — two record loops, an auxiliary input, and that's it.

The main unit is a cluster of four brushed-aluminum diamonds, with the top diamond housing an AM/FM tuner and all the pre-amplifier controls. The other diamonds hold three CD players that can be assigned

### fast facts

#### DIMENSIONS

**Main unit** 20 $\frac{5}{8}$  inches wide, 20 $\frac{5}{8}$  high, 4 $\frac{1}{2}$  inches deep

**Satellites** 4 $\frac{3}{4}$  inches wide, 13 $\frac{3}{4}$  inches high, 4 $\frac{1}{2}$  inches deep

**Subwoofer** 15 inches wide, 19 $\frac{5}{8}$  inches high, 14 inches deep

**WEIGHT** 75 pounds total

**PRICE** \$3,500

**MANUFACTURER** Nakamichi America, Dept. S&V, 18375 S. Broadwick St., Rancho Dominguez, CA 90220; [www.nakamichi.com](http://www.nakamichi.com); 310-631-2122

to independent zones so you can send different music to different rooms. You can also use them like a CD changer for continuous playback and can change two of the discs while a third is still playing. With a simple touch, the disc drawer opens, sliding a CD out in a shaft of blue light. For a few moments, I felt like Homer Simpson transfixed by the opening and closing of the CD slots.

The diamond theme is continued in the logos on the left/right speakers and the subwoofer, which has a diamond-shaped grille, too. Each of the main speakers has twin 3-inch woofers and a 1-inch soft-dome tweeter. The subwoofer holds the system's amplifier, which sends 30 watts to each of the speakers while holding onto 50 watts for its own needs.

The preamp has a wicked cool interface with a whole host of control buttons, but everything from bass settings to CD-changer operation can also be handled through the large, full-functioned main remote control. There's also a smaller, stripped-down remote with only the basic commands.

The SoundSpace 9 took about 10 minutes to put together, with the most difficult task being assembling the tabletop stands shown (taller floor stands are also available). The main unit can be hung on a wall, which gives it a cool, Buck Rogers look. But I didn't feel like losing my security deposit by drilling huge holes in the wall, so I opted to put it on the stand.

I got a sense of the system's quality soon after taking it out of the box. Once I set up the antenna, I flipped on the tuner and found that stations from both ends of the FM dial came in loud, crisp, and clear. And, for one brief moment, I almost dug a Top 40 station. Almost.

Next I gave the SoundSpace 9 a real workout with über-jazz bassist Charles Mingus's great album *The Black Saint and the Sinner Lady* (Impulse), letting his wild plucking hit the subwoofer with some seriously unique bass lines. The system didn't even break a sweat while I grooved like the cynical, wannabe hep-cat I think I am. I pushed the boxy subwoofer's 8-inch driver to obnoxious volumes, but it continued to accurately produce Mingus's deep bass notes. Pushed a little harder, the sub did begin to distort, so I kept the listening lev-

els normal to slightly exaggerated and noted how it blended with the satellite speakers to create a full, even midrange.

With beer in one hand and the larger of the two user-friendly remotes in the other, I decided to shake the place up with the first Dave Matthews track, "I Did It," a trippy, thumping anthem that filled my smallish living room with funky horns, guitars, and bass lines. The system showed off his straining, gritty vocals, and the band's fiddles swirled from one speaker to the other, creating an "I'm at a Dave Matthews concert — only in my underwear and not stoned!" effect.

I was particularly impressed with the brass on the Mingus and the guitars on the Matthews. They seemed to float above the bass-and-drums foundation, sounding crisp and full. To hear such tremendous sound from such a streamlined system was a thrill and, suffice it to say, I rocked as hard as a guy can without the cops showing up.

I also popped in Tool's *Aenima* (BMG/Zoo/Volcano/Pavement/Cz) — the greatest rock album of the past five years — and cranked the sucker up. Tool serves up a far different kind of bass line from jazz legend Mingus or post-Grateful Dead Matthews — a hard, kinetic sound that alternates between a steady, hypnotic boom and a harsher thump like a runaway truck. And the album was a great test for the system's overall chops.

My only real gripe concerns one element of the design, and I only mention it because it's the design that really makes the SoundSpace 9 stand out. For such an elegant system, you'd have thought they would have spent a little more time on the subwoofer. It's just a box with a diamond-shaped grille.

That minor bitch-and-moan aside, this is one high-end toy that's definitely worth owning — even if the gear in question is more high-class than you are. In fact, I'm putting it on the furniture list I'll never write for the executive office I'll never occupy. But for now, I'm enjoying standing around in my favorite boxers, downing beer, and blaring this elegant system in my humble living room (the roaches dig that thumping bass).



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## HDTV on Your PC

### Telemann HiPix DTV-200 high-definition TV tuner card

**S**o you're intrigued by the possibility of getting pristine high-definition TV (HDTV) pictures for free over the air from your local broadcast stations — but not so intrigued that you're willing to shell out thousands of dollars for the necessary tuner/decoder and monitor? Well, what if you could whet your HDTV appetite for only \$399 using some gear you may already own — namely, a personal computer running Windows and a high-res monitor? That's the promise of the HiPix DTV-200 from Telemann, an add-in digital/analog TV tuner card for your PC.

The HiPix DTV-200 can receive, decode, and even *record* high-definition and standard-definition digital TV signals for display on a computer monitor. (It also receives, but doesn't record, standard analog TV signals.) As you might expect, if you want to receive high-def on your PC, it can't be much of a slouch. Minimum system requirements call for Windows 98 Second Edition, Windows ME, or Windows 2000 running on a 333-MHz Pentium II processor (or equivalent) with 64 megabytes (MB) of RAM. After attempting to install the HiPix on a lesser machine — and failing miserably — I upgraded my system with a new motherboard holding a 900-MHz AMD Athlon processor and 256 MB of RAM. I ran Windows 98 SE.

The DTV-200 consists of two circuit cards. The main one plugs into an available PCI socket in your PC. The second, called the expansion card, has the various video and audio input/output connectors and is tethered to the main board by ten-, six-, and three-pin cables. It doesn't occupy a PCI socket, but it might block access to one — depending on your PC case or motherboard — as it needs to be mounted in a rear-panel expansion slot.

There are two main installation options. The first is for when you use separate monitors — one for your PC's output, the other for video from the DTV-200. That's what I did, and I'll describe it below. The other option is to use one monitor (either

the one for your PC or a "multimedia" TV with a VGA input) to view everything. To do this you'll need to install the supplied loopback cable between your PC's video card and the DTV-200. There is yet a third option: using two separate monitors but viewing the HiPix output on both (in a PIP window on your PC monitor). To achieve that level of flexibility, you'd need to install a ribbon cable (not supplied) between the DTV-200 and your card's video-input port, or VIP, assuming it has one.

I used two separate monitors and audio systems — it was more convenient than using a single monitor because it let me keep the software control panel always available. Unless you use your video card's VIP, which I didn't, the HiPix output will display only in full-screen mode, not in a window. Viewing full-screen not only hides the control panel, which you can recall with a mouse click, but means you can't use the computer for anything else while you watch TV.

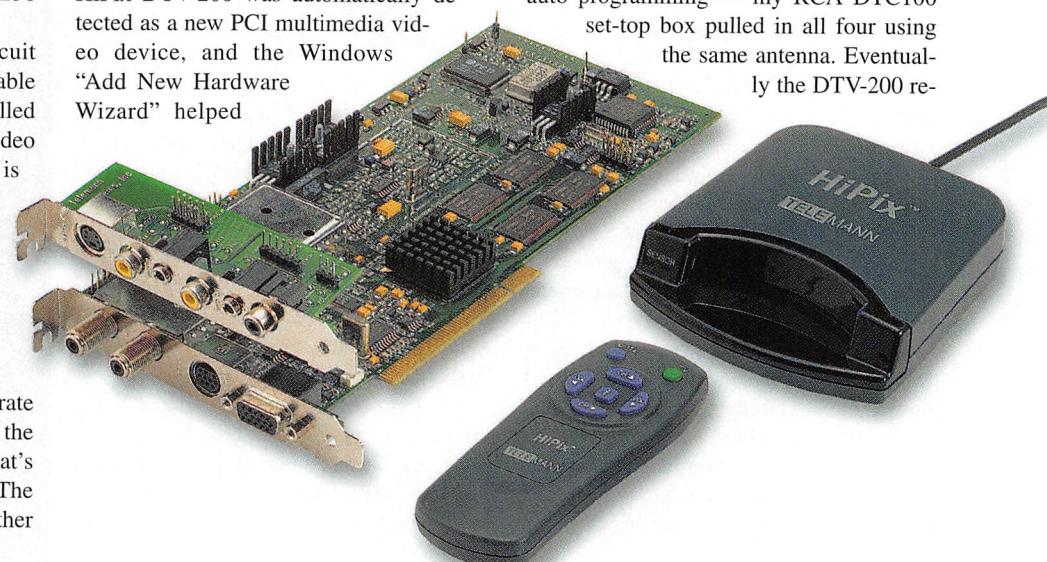
To get started, I installed the cards in adjacent slots in the PC, closed up the case, and connected the DTV-200's video output to my 36-inch RCA MM36100 TV and its coaxial Dolby Digital output to my A/V receiver. After I rebooted the computer, the HiPix DTV-200 was automatically detected as a new PCI multimedia video device, and the Windows "Add New Hardware Wizard" helped

me install the proper device driver from the supplied CD-ROM. So far, so good.

That done, I crossed my fingers and proceeded to install the software application that controls the DTV-200. It went fairly smoothly, but a couple of manual system tweaks were needed before I could use it. First, from the Windows System Properties menu, I had to set my hard drive for direct memory access (DMA). Second, I had to disable all of my operating system's standby settings to ensure that my hard drive would always keep spinning. (It helps to have a bit of computer geek in you.) That accomplished, I was ready to run the software, which brings up the onscreen control panel (shown on page 72).

Its operation should be intuitive to anyone who's ever operated a TV. You can't really get started using it, however, without selecting or setting a few more options. For example, you must select the card's output resolution from the five options available, which range from 720 x 480 pixels (progressive) to 1,920 x 1,080 pixels (interlaced). After wending my way through the various options tabs, I finally got to the Auto-Program menu and told the DTV-200 to start scanning for channels. It might sound complex — and compared with hitting a TV's power switch, it is — but Telemann's good manual (though annoyingly supplied as a PDF file you have to print yourself) seems to have all bases covered.

Of the four stations broadcasting digitally in New York during my testing, the DTV-200 found only two of them during auto programming — my RCA DTC100 set-top box pulled in all four using the same antenna. Eventually the DTV-200 re-



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ceived them all, too, but only after I fiddled with the antenna position. (A signal-strength meter that came via a software upgrade downloaded from Telemann's Web site helped a good deal.) At first, getting good reception at my location 35 miles east of New York City using my attic-mounted antenna was trickier with the DTV-200 than with the RCA box. The software upgrade made it a much closer call and seemed to make overall operation of the DTV-200

Basically, what the DTV-200 does is write the incoming 19-megabit-per-second MPEG data stream of the high-definition signal to the hard drive. Since this requires almost 9 gigabytes of storage per hour of video, you can't really use the HiPix to build a video library of high-def programming. But it's great for recording programs that you'd otherwise miss. (When I recently upgraded to a 40-gigabyte hard drive, I was sure it would be enough storage

space to last at least a couple of years, but now it almost fills up every Monday night just with the high-def prime-time lineup on CBS!)!

The HiPix user interface is a little clunky, mainly because the broadcasters — at least the ones in New York — don't include program-guide information in their signals, which would permit one-button recording. But if you don't mind entering filenames to identify what you want to record, you won't have any problem. Interestingly, when a program is recorded, it's not stored in a single file.

Instead, a directory is created, and the data is stored in separate, 1-minute-increment files in that directory. They play back seamlessly, and you can jump to any point in the program by selecting the file for the closest minute. Unfortunately, there are no traditional fast-forward or reverse controls — but what do you expect for 400 bucks?

An infrared remote control that lets you select sources, change channels, and control volume is included with the DTV-200; it attaches to a serial port. I chose not to use it, finding my wireless mouse more convenient.

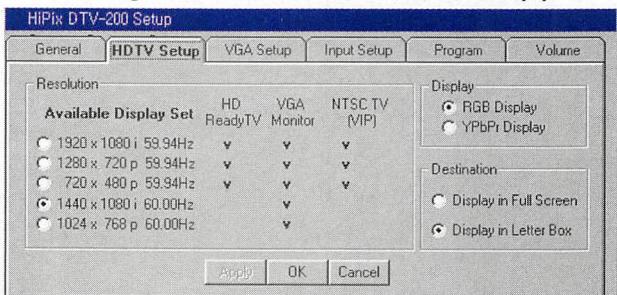
Telemann's HiPix DTV-200 isn't for everyone — some people don't want a home theater with a PC in it. But it's a natural for any PC enthusiast or for someone looking to get DTV at a rock-bottom price. And anyone looking for a way to time-shift HDTV broadcasts has, for now, nowhere else to turn.

— Brian C. Fenton

**Telemann, Dept. S&V, 2345 Harris Way, Suite 100, San Jose, CA 95131; phone, 408-435-9275; Web, [www.telemann.com](http://www.telemann.com)**



Above, the onscreen control panel for the Telemann HiPix high-def TV tuner card; below, the setup panel.



more robust as well. At any rate, when the signals were there, they looked great, whether displayed on a 17-inch computer monitor or my 36-inch TV. Okay — *Becker* might not be a compelling reason to watch HDTV, but if you want to see the wrinkles Ted Danson has picked up since *Cheers*, high-def is the way to do it.

The slickest thing about the HiPix card, though, was not that it could receive high-def signals and output them to a monitor, but that it let me use my PC as a high-def hard-disk recorder. No, it doesn't turn your PC into a TiVo- or ReplayTV-like box. But since Panasonic recently discontinued its HD1000 D-VHS recorder, there are no consumer high-definition recorders currently available. And because copyright issues will likely keep high-def recorders off the market for the foreseeable future, this is a fantastic feature. When I found out that other obligations would make me miss some of the NCAA Final Four high-def broadcasts on CBS, I realized the HiPix had become an indispensable addition to my home theater. Eat your heart out!

- AK- Alaska A/V: Juneau • Pyramid: Anchorage.
- AL- Cohen's Electronics: Montgomery • Elite Electronics: Jackson's Gap • Hooper's: Birmingham • Kincaid's TV: Tuscaloosa.
- AR- Custom Audio Video: Little Rock.
- AZ- Jerry's Audio Video: Phoenix • Scottsdale • The Specialists: Tucson • Ultimate Electronics: Phoenix Metro Area • Warehouse Electronics: Yuma.
- CA- Access to Music: Larkspur • Accurate A/V: S. Lake Tahoe • Ahead Stereo: Los Angeles • Audio Concepts: Long Beach • San Gabriel • Audio Video City: San Luis Obispo, Santa Maria • Bay Area Audio: San Jose • Boots Camera: Fresno • Century TV: Garden Grove • CH Automation & Theater: West LA • Creative Stereo: Santa Barbara • David Rutledge Audio: Palm Desert • Digital Ear: Tustin • Discount Sales: Ontario • Magnolia HiFi: Santa Clara, San Ramon • Paradyne: Sacramento • Performance Audio: San Francisco • Shelley's Stereo Video: Woodland Hills • Systems Design: Redondo Beach.
- CO- Soundtrack: Denver & Suburbs, Boulder, Ft. Collins, Colorado Springs • Avanage Sight & Sound: Monrose • Pro Home Systems: Grand Junction.
- CT- Audio Etc: Orange • Cartons Stereo/Video: Danbury • Roberts Audio Video: New London • The Sound Room: Westport • Stereo Shop: Hartford.
- DC & Washington Suburbs: Myer-Emco.
- DE- Hi Fi House: Wilmington.
- FL- Absolute Sound: Winter Park • Audio Center: Deerfield Beach • The Audiophile: Vero Beach • A/V in Paradise: Key West • Cogner for Stereo: Clearwater • Hoyt Stereo: Jacksonville • Sound Components: Coral Gables • Sound Ideas: Gainesville • Sound Insights: Ft. Pierce • Sound Waves: Lakeland • Stereoworks: Daytona Beach.
- GA- Georgia Home Theater: Atlanta • Audio Warehouse: Savannah • Ken's Stereo: Macon • Merit TV: Columbus • Stereo Connections: Valdosta • Stereo Festival: Atlanta • Stereo Shop: Martinez.
- HI- Honolulu Home Theater: Honolulu.
- IA- Ultimate Electronics: Cedar Rapids, Davenport, Des Moines • Archer Audio Video: Ft. Dodge • Audio Video Logic: Des Moines • Audio Visions: Sioux City • Hawkeye Audio: Iowa City, Cedar Falls • Renier's: Dubuque • Sound World: Mason City.
- ID- Ultimate Electronics: Boise.
- IL- Barretts Home Theater: Bloomingdale, W. Dundee, Aurora • Good Vibes: Bloomingdale • Champion • Jon's Home Ctr: Quincy • Music in Motion: Chicago Heights & Crestwood • Sound Forum: Crystal Lake • State Line Satellite: Rockford • Sterling Electronics: Sterling • Sundown A/V: Springfield • The Shoppe: Bradley.
- IN- Classic Stereo: Ft. Wayne, Mishawaka • Kings Great Buys: Evansville • Ovalion Audio: Clarksville • Indianapolis, Lafayette.
- KS- Accent Sound: Overland Park • Advance Audio: Wichita • Audio Junction: Manhattan.
- KY- King's Great Buys: Owensboro • Long Run Audio: Paducah • Ovalion Audio: Lexington, Louisville.
- LA- Absolute Audio Video: Lafayette • Alterman Audio: Metairie • Home Theater Concepts: Slidell • Mike's Audio: Baton Rouge • Wright's Sound Gallery: Shreveport.
- MA- Media Systems: Boston • Nantucket Sound: Hyannis • Pittsfield Radio: Pittsfield.
- MD- Gramophone: Baltimore, Ellicott City • Myer-Emco: Frederick, Gaithersburg, Beltsville • Rockville • Soundscape: Baltimore.
- ME- New England HiFi: Scarborough.
- MI- Contemporary Audio: Okemos • Pecar's: Detroit • Troy • Classical Jazz: Holland • Court St. Listening Room: Saginaw • Home Entertainment Store: Kalamazoo • Paragon Sound: Ann Arbor • Superior Sound: Grand Rapids • Today's Audio: Flint.
- MN- Audio King: Minneapolis & Suburbs, Rochester, St. Cloud • Audio Designs: Winona.
- MO- Independence A/V: Independence • Sound Central: St. Louis.
- MS- Ideal Acoustics: Starkville • McLellan TV: Hattiesburg • Players A/V: Ridgeland.
- MT- Rocky Mt. Hi Fi: Great Falls • Vann's Inc.: Missoula, Helena, Bozeman, Hamilton, Kalispell, Billings, Butte.
- NC- Audio Unlimited: Jonesville • Audio Video Systems: Charlotte • Audio Visions: Wilmington • Now Audio Video: Durham, Greensboro, Raleigh, Winston-Salem • Tri City Electronics: Conover.
- NE- Custom Electronics: Omaha, Lincoln • Midwest Audio: Kearney.
- NH- State Street Disc.: Portsmouth.
- NJ- 6th Avenue Electronics: Springfield, Livingston, East Brunswick, Woodbridge, Paramus, West Longbranch, West Paterson • Camera and TV Stop: Medford • Monmouth Stereo: Shrewsbury • Woodbridge Stereo: West Caldwell, Woodbridge.
- NM- Ultimate Elect.: Albuquerque • Sound Ideas: Albuquerque.
- NV- Ultimate Elect.: Las Vegas.
- NY- Audio Breakthroughs: Manhasset • Audio Den: Lake Grove • Clark Music: Albany, Syracuse • Stereo Exchange: Manhattan • Hart Electronics: Vesta • Listening Room: Scarsdale • Media Room: Mt. Kisco • Park Ave. Audio: Manhattan • Rowe Camera: Rochester • Speaker Shop: Amherst.
- OH- Absolute Theater: Powell's Audio Craft: Akron, Cleveland, Mayfield Hts., Westlake • Audio Etc.: Dayton • Belden Audio: Canton • Classic Stereo: Lima • Ohio Valley Audio: Cincinnati • Paragon Sound: Toledo • Stereo Visions: Columbus • Threshold Audio: Heath • Unique Home System: Cincinnati.
- OK- Ultimate Electronics: Tulsa.
- OR- Bradford's Home Ent.: Eugene • Kelly's Home Ctr: Salem • Magnolia HiFi: Portland • Beaverton, Clackamas, Tigard • Stereo Planet: Bend.
- PA- Audio Junction: Pittsburgh • Audio Lab: Fairless Hills • Ed's TV: Hatfield • Gary's Elect.: State College • Hart Electronics: Blairstown • Hi Fi House: Abington, Broomall • Listening Post: Pittsburgh • Palmer Audio: Allentown • Stereo Shoppe: Selnas Corner, Williamsport • Stereoland: Natrona Heights • Studio One: Erie • The StereoShop: Greensburg.
- RI- Stereo Discount Ctr.: Providence.
- SC- Custom Theater & Audio: Myrtle Beach • Upstairs Audio: Columbia.
- SD- Audio King: Sioux City • Sound Pro: Rapid City.
- TN- College HiFi: Chattanooga • Good Vibrations: Cookeville • Hi Fi Buys: Nashville • Now Audio Video: Knoxville • Modern Music: Memphis • Sound Room: Johnson City.
- TX- Audio Video: College Station • Bunkley's Sound Systems: Abilene • Bjorn's San Antonio • High Fidelity: Austin • Home Theater Store: Arlington, Austin, Houston, Dallas • Crystal Clear: Dallas • Marvin Electronics: Ft. Worth • Matt Pantzer Sat. & TV: Waco • Mike Massey, Inc.: Odessa • Sound Quest: El Paso.
- UT- AudioWorks: Salt Lake City • Crazy Bob's: St. George, Cedar City • Ultimate Elect.: Layton, Murray, Orem, Salt Lake City.
- VA- Myer-Emco: Falls Church, Tyson's Corner, Fairfax • Audio Connection: Virginia Beach • Audiotronics: Roanoke • Home Media Store: Richmond.
- WA- Bunch-Finnegan TV: Kennewick • Magnolia HiFi: Seattle & Suburbs, Tacoma, Silverdale, Spokane • Pacific Sight & Sound: Wenatchee.
- WI- Audioworks: Washburn • Flanner's A/V: Milwaukee • Hi-Fi Heaven: Green Bay • Sound World: Wausau • Team Electronics: Manitowoc.
- Puerto Rico- Precision Audio: San Juan.
- Canada- Advanced Electronics: Winnipeg • Air Waves Radio & TV: Moose Jaw.
- SK- Audio Express: Saskatoon • SK-Bay Bloor Radio: Toronto.
- Canadian Sound: Brampton, Ont. • Digital Dynamics: Abbotsford, B.C.
- Environment Electronique: Westmount, Que. • Harrington Audio: Peterborough, Ont. • K&W Audio: Calgary • Kebecson: Montreal.
- Lipton's Elect.: Newmarket, Ont. • Sound Station: Courtenay, B.C.
- Stereo Plus: Orleans, Ont. • StereoLand: Windsor, Ont.
- Mexico- Contact Grupo Volumen: Mexico City.

# “Like Strapping Yourself Onto a Rocket Sled and Lighting the Fuse”

— Darryl Wilkinson, *Home Theater Magazine*

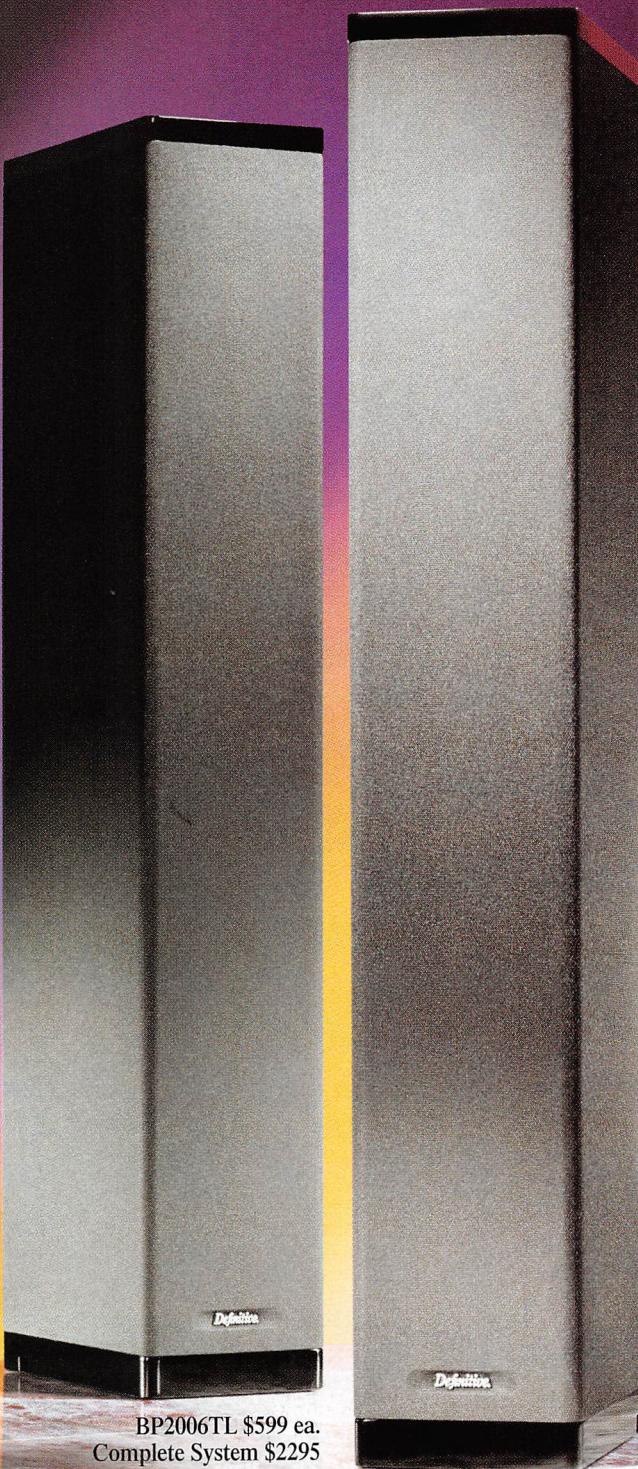
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# subway SERIES

Come take a wild ride with eight subwoofers from Polk, Velodyne, Infinity, and M&K **by Tom Nousaine**



This page, clockwise from top left: Polk Audio PSW650, Velodyne VLF-810, Infinity Intermezzo 1.2s, and Polk PSW250. Facing page, clockwise from top left: Velodyne SPL-1200, M&K MX-125 Mk II, Infinity Interlude IL 100s, and M&K K-9.

# E

every day it's the same: You stand on the same subway platform, at the same time, looking at the same cluster of fellow commuters, all of you waiting to begin the long trek home. But as you feel the concrete platform begin to rumble and see the headlight play along the tunnel wall, you suddenly imagine the train careening wildly into the station and — brakes screaming, sparks flying — coming to a halt. Everyone else on the platform hits the deck as a blaze of gunfire erupts from the train's shattered windows. And then the doors fly open and the arch villain strides out, ready to take you on in the final confrontation. Suddenly, the commute doesn't seem so dull.

Once at home, still in your daydream's grip, you pop *End of Days* into your DVD player and jump to the scene where the subway train, engulfed in flames, comes flying through the tunnel. But your home theater system isn't even giving

you the rumble of the real subway, let alone the slam of a train out of control. It all seems flat and distant, and you find yourself faced with the fact that your system just can't keep pace with either the movie or reality.

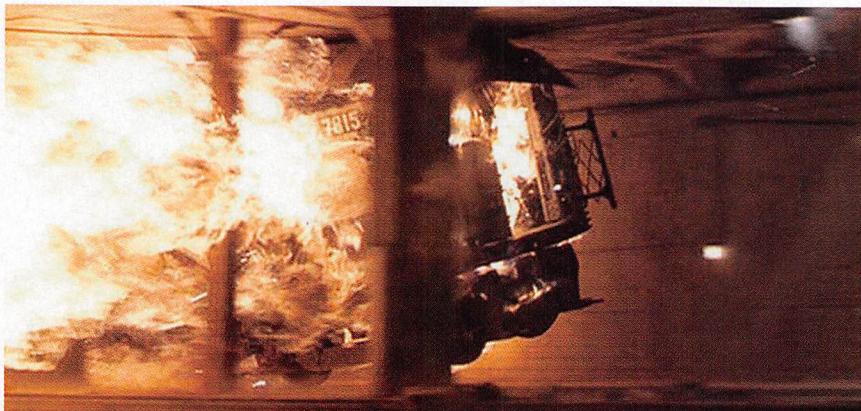
It's time to buy a subwoofer.

True, many CDs and DVDs don't have much going on at the bottom end (below 50 Hz or so), so a sub might seem like an audiophile indulgence. But more and more discs — especially DVDs — exploit what lies beneath, and the big blockbuster films almost always do. So getting a first-rate subwoofer isn't a matter of keeping up with the home theater Joneses — it's about experiencing all the fullness and depth movie soundtracks and music have to give.

And there are more mundane reasons for thinking about adding a sub to your speaker array. The best locations for reproducing bass aren't the same as for higher frequencies. While you should keep your front speakers away from the

PHOTOS BY TONY CORDEA





You can depend on a subway scene to give your subwoofer a good workout. This scene from *End of Days* should rumble your room with lots of low-frequency energy.

front and side walls of the room, and your surrounds high on the side or back walls, subs belong on the floor — and usually work best tucked into a corner. But a sub's optimal position isn't as fixed as those for your other speakers, and thanks to that flexibility, adding a subwoofer can be the single easiest way to improve your system's overall sound.

The roundup that follows is similar to last year's "Bargain Bassment" (May 2000), which looked at five \$500 subs, but with a new wrinkle. Rather than focus on subs that sell for the same price, I gave a thorough thrashing to eight models from four manufacturers. Each company submitted a budget sub as well as a second, higher-

price model so we could get a handle on what you get from a subwoofer when you move up the price scale.

Infinity gives us the biggest price spread with the \$499 Interlude IL 100s and the \$1,800 Intermezzo 1.2s. On the other hand, only \$470 separates Polk Audio's PSW250 (\$300) and PSW650 (\$770). The M&K K-9 and Velodyne VLF-810 both go for \$550, while M&K's MX-125 Mk II goes for \$1,199 and Velodyne's SPL-1200 is a cool \$1,399. But more money doesn't necessarily buy you subwoofer happiness. As we'll see, there are a lot of other factors that go into determining which sub's right for you — like performance (see "In the Lab," pages 80-81, for my measurements, including

graphs of each sub's maximum output).

All eight subs have line-level inputs, output-level controls, a phase switch, a variable-frequency electronic crossover, and an internal power amplifier. All but the M&K MX-125 Mk II have speaker-level inputs, some have both line- and speaker-level outputs, and all but the Polks have a crossover bypass (for use with a receiver's bass-management facilities). All except the M&K pair and the Polk PSW250, which must be manually switched on and off, have an auto-power feature that turns them on or off depending on whether an input signal is present. The M&K MX-125 Mk II and Polk PSW650 are the only models without magnetic shielding. (See "Fast Facts" below for more on each sub's specifications and features.) While every sub here has everything necessary to fit in with almost any home theater system, some have additional features that can help make the job easier.

## Infinity Interlude IL 100s and Intermezzo 1.2s

You could never mistake these two Infinity subwoofers — designed for the Interlude and Intermezzo home theater speaker systems, respectively — for your usual black cube with a square black grille. With their

## FAST FACTS

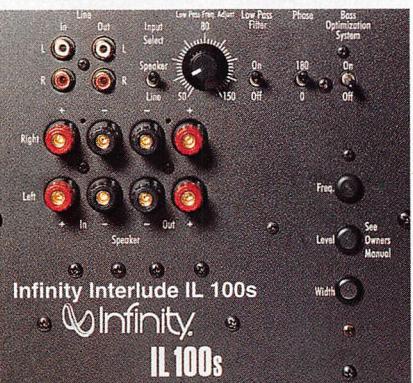
	INFINITY Interlude IL 100s	INFINITY Intermezzo 1.2s	M&K K-9	M&K MX-125 Mk II
DRIVER SIZE	10 inches	12 inches	8 inches	12 inches (two, push-pull)
ENCLOSURE TYPE	vented	sealed	sealed	sealed
RATED AMPLIFIER POWER (continuous)	250 watts	850 watts	75 watts	150 watts
RATED FREQUENCY RESPONSE	32 to 150 Hz ±3 dB	23 to 150 Hz ±3 dB	35 to 200 Hz ±3 dB	20 to 125 Hz ±3 dB
DIMENSIONS (WxHxD)	13½ x 14½ x 17½ inches	18¼ x 15¼ x 13¾ inches	13¾ x 10⅛ x 11 inches	15¼ x 23¼ x 19¾ inches
FOOTPRINT	1½ square feet	1¾ square feet	1 square foot	2 square feet
GROSS VOLUME	2 cubic feet	2¼ cubic feet	¾ cubic foot	4 cubic feet
WEIGHT	34 pounds	62½ pounds	22 pounds	67 pounds
INPUTS	line and speaker level	line and speaker level	line and speaker level	line level
OUTPUTS	speaker level	line and speaker level	speaker level	none
VARIABLE LOW-PASS CROSSOVER	50 to 150 Hz	50 to 150 Hz	50 to 125 Hz	50 to 125 Hz
HIGH-PASS OUTPUT FILTER	none	100 Hz, 6 dB per octave	none	none
FINISH	black aneigre, maple, or cherry veneer; black, blue, burgundy, or platinum grille	platinum finish aluminum, woodgrain trim	matte black and titanium vinyl or white	black lacquer bead or black or light oak veneer
WARRANTY	5 years	5 years	10 years driver, 5 years amp	10 years driver, 5 years amp
PRICE	\$499	\$1,800	\$550	\$1,199

All information in this table was provided by the manufacturers. Prices given are manufacturers' suggested retail; dealer prices may vary.

graceful shapes and striking design touches, both display the kind of styling you usually associate with expensive foreign cars. The elegant curves of the Intermezzo's platinum-finish cast-aluminum cabinet are especially striking. Even though they're about the same size, the Intermezzo sub is nearly twice as heavy as the Interlude, with the additional weight attributable to its cabinet and 850-watt amplifier.

The Interlude and Intermezzo subs have complete feature sets and some nice extras, including 15-foot power cords that give you a lot of placement flexibility. Both have front-panel level controls in addition to the usual rearward controls. At first glance, the front-mounted control seems to be a plus — it could be handy for making occasional level adjustments once you have the sub in place — but setup is easier when all of the controls are in one place.

Both models also have a one-band parametric equalizer, which you can use with Infinity's unique Room Adaptive Bass Optimization System (R.A.B.O.S.) to help find the best position for the sub and equalize its room response. The R.A.B.O.S. test and measurement kit, which includes instructions, a test CD, and a sound-level meter, comes standard with the Intermezzo; it's a \$60 option with the Interlude. You place the sub where you expect to put it, play the CD through the sub, use the sound meter to measure the frequency response at



**Infinity Systems**, Dept. S&V, 250 Crossways Park Dr., Woodbury, NY 11797; [www.infinitysystems.com](http://www.infinitysystems.com); 800-553-3332

your listening position, and then plot the results on the supplied chart. The result is a nice graph of the sub's response in your room. You then use the supplied template

and response-curve "slide rule" to determine the optimum settings for the equalizer. The object, of course, is to make the bass sound as smooth as possible, neither boomy nor weak in any part of the sub's range. (The kit, available separately, will help anyone determine exactly what kind of effect the room has on a subwoofer's performance.)

Unlike many subs I've tested, both models have crossover markings that sync pretty well with the actual crossover frequencies. The Intermezzo's line-level outputs include a 100-Hz, 6-dB-per-octave high-pass filter that's not mentioned in the manual, and the rear control panel sports a push-button labeled High-Level High-Pass that's pictured in the manual but not mentioned or specified. Guess what: it turns on a 100-Hz, 6-dB-per-octave high-pass filter for the speaker-level outputs.

In the lab, both models pumped out the kind of deep bass to qualify them as true subwoofers (rather than "bass modules" that cut off at about 40 Hz), but the Intermezzo played louder and lower. The Interlude's 10-inch driver and 250-watt amp produced 79 dB sound-pressure level (SPL) at 20 Hz with low distortion, while the Intermezzo, with its 12-inch driver and 850-watt amp, managed 90 dB at 20 Hz and a stout 80-dB rumble way down at 16 Hz.

But lab measurements tell you only so much. It's how they perform in a home theater that matters, and both proved to be true-blue subs there, too. They handled "bass-head" CD tracks — like "976-BASS" from Bass Erotica's *Bass Ecstasy* (Neurodisc) and Bass Connection's "Pure and Perfect Bass" from *Drivin' Bass* (Neurodisc) — with aplomb, if not plaster-shattering SPL. They also did well by below-20-Hz material, like the opening organ pedal of *Thus Spake Zarathustra* from *DVD Space Spectacular* (Delos) and "Jurassic Lunch" from Telarc's *The Great Fantasy and Adventure Album*. (For some of my reference tracks, see "Seven More Ways to Break Your Lease," page 83.)

Both of the Infinity subs also rumbled with authority when I took them for a ride with demanding DVD soundtracks like the subway scenes in *The Matrix* (Chapter 33) and *End of Days* (Chapter 17), although

POLK AUDIO PSW250	POLK AUDIO PSW650	VELODYNE VLF-810	VELODYNE SPL-1200
8 inches	10 inches (two)	8 inches (10-inch passive cone)	12 inches
vented	vented	vented	sealed
50 watts	165 watts	125 watts	750 watts
40 to 160 Hz ±3 dB	28 to 125 Hz ±3 dB	26 to 120 Hz ±3 dB	22 to 120 Hz ±3 dB
11½ x 13 x 18½ inches	17½ x 18¾ x 19 inches	14¾ x 17 x 15¾ inches	14½ x 14¾ x 15¾ inches
1½ square feet	2¼ square feet	1½ square feet	1½ square feet
15/8 cubic feet	3½ cubic feet	2¼ cubic feet	17/8 cubic feet
29 pounds	55 pounds	47 pounds	55 pounds
line and speaker level	line, speaker, and LFE	line and speaker level	line and speaker level
speaker level	line and speaker level	line level	line level
80 to 160 Hz	60 to 160 Hz	40 to 120 Hz	40 to 120 Hz
80 Hz, 6 dB per octave	80 Hz, 6 dB per octave	80 Hz, 6 dB per octave	80 Hz, 6 dB per octave
matte black vinyl	gloss black	black matte, gloss top	black woodgrain vinyl
5 years driver, 2 years amp	5 years driver, 2 years amp	2 years	2 years
\$300	\$770	\$549	\$1,399

the Interlude had 3 to 6 dB less output at 25 Hz (as measured with my sound-level meter). On *Zarathustra*'s sustained organ note, the Interlude sometimes sounded slightly louder than it measured because it overemphasized the tone's second harmonic. But it did manage to keep port noise well in check, which is no small feat.

The Intermezzo's admirable tendency to distribute its acoustic output evenly across its bandwidth (most subs have more output at the higher frequencies) meant that it delivered more power to the bottom octaves than many other subwoofers in its class. What does that mean for you? Lots of chest-pounding bass that will envelope you when the program material calls for it and a chance to actually hear the true glory of a sustained organ pedal such as *Zarathustra*'s 16-Hz tone.

## M&K K-9 and MX-125 Mk II

Like Mutt and Jeff, the M&K entries are the largest and the smallest subs to attend our little party. The diminutive K-9 weighs just 22 pounds and will take up less than a cubic foot of your living space, while the MX-125 Mk II weighs 67 pounds and occupies over 4 cubic feet. (Note that my



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cabinet measurements include connectors, knobs, and amplifier heat sinks — like the monster that protrudes 2 inches from the rear of the larger M&K sub.)

The MX-125 Mk II's cabinet holds a pair of 12-inch push-pull drivers, with one behind the grille and the other mounted at the bottom of the enclosure. Push-pull driver mounting is said to reduce harmonic distortion by canceling driver nonlinearity, but the real advantage of dual drivers is that they move twice as much air.

The MX-125 has the most limited feature set in the group, with only a line-level input and no outputs of any kind. The K-9 has both line- and speaker-level inputs as



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well as speaker-level outputs. Both have crossover bypass switches, but there's nothing about their crossover facilities to keep most folks from using them in a home theater system. Both also have very steep crossover slopes of around 36 dB per octave and, as with the Infinity subs, the dial markings closely matched the actual crossover response. The calibrated level-control indicators proved to be surprisingly accurate, too.

The K-9's single 8-inch driver had remarkably good bass extension for its size, but, as you'd expect, its dual-driver big brother played a lot louder and went a lot lower — all the way down to 20 Hz. In fact, with music or movies, I didn't notice any difference between the two subs unless there was a lot of deep bass. I could always

## IN THE LAB

	INFINITY Interlude IL 100s	INFINITY Intermezzo 1.2s	M&K K-9	M&K MX-125 Mk II	POLK PSW250
FREQUENCY RESPONSE	47 to 131 Hz ±2.0 dB	30 to 118 Hz ±2.1 dB	38 to 116 Hz ±1.8 dB	25 to 120 Hz ±2.2 dB	28 to 126 Hz ±1.9 dB
LOW-END EXTENSION (at 10% distortion)	20 Hz at 79.2 dB SPL	16 Hz at 80.1 dB SPL	25 Hz at 77.8 dB SPL	20 Hz at 88.9 dB SPL	32 Hz at 91 dB SPL
TONE-BURST SEQUENCE (25 to 62 Hz, 10% distortion limit)					
average SPL	103.5 dB	105.5 dB	90.4 dB	105.3 dB	97.3 dB
maximum SPL	107.6 dB at 62 Hz	111.9 dB at 62 Hz	100.6 dB at 62 Hz	114.3 dB at 62 Hz	102.9 dB at 62 Hz

I first measured the near-field frequency response of each subwoofer (with the microphone within  $\frac{1}{2}$  inch of the driver) at a level equivalent to an 85-dB sound-pressure level (SPL) at 2 meters and with the crossover-frequency control set to maximum bandwidth. Actual response could extend 2 to 10 Hz lower depending on the room size. (Contrary to popular myth, the *smaller* the room, the lower and louder the bass response.)

I also verified the turnover points and slopes at the marked crossover-frequency positions — or at full, half, and minimum rotation for those subs whose dials lacked markings. The slopes for all eight subs were about the same, 24 dB per octave or greater, except for the Polk PSW250 (12 dB per octave); all maintained the basic slope through the full range. Typically, the output level fell 3 to 10 dB as the crossover was lowered from the top to the bottom of its range. The M&K MX-125 Mk II had practically no level/crossover interaction, and the Velodyne SPL-1200, Infinity Intermezzo 1.2s, and M&K K-9 had minimal interaction, about 3 to 5 dB top to bottom. The Velodyne VLF-810, Polk PSW650, and Infinity Interlude IL 100s varied 8 to 10 dB.

Next I measured the peak room SPL with a 10% distortion limit at one-third-octave frequencies over each subwoofer's full bandwidth using a special ramped 6 1/2-cycle tone burst that simulates a musical signal (see graphs at right). Each sub was installed in turn in the optimal corner of my listening room, and the SPL microphone was at the optimal listening position some 2 meters away. A distortion-sensing microphone was in the direct field of the speaker. The SPL figures were averaged over the 25- to 62-Hz range, where most of the bass in pop recordings and movie soundtracks resides. I also determined the maximum SPL each sub could produce over this range with no more than 10% distortion. In every case, this was at the top of the range.

Standing waves heavily influence any sub's room response. In my large room (7,600 cubic feet), the three primary boundaries reinforce bass by 3 to 4 dB below 70 Hz. Because the low-frequency pressure effect caused by all six room boundaries doesn't begin in my room until about 16 Hz, it didn't affect the performance numbers for these subs. However, in a moderately sized room (2,500 to 3,500 cubic feet), this effect will start at around 30 Hz,



With its thrill-a-minute action, *The Matrix* is another subwoofer torture test. Played through a first-rate sub, the famous subway scene will give your house a good shake.

count on the MX-125 Mk II for a good rumble, while on a lot of the same material — like the soul-rattling roar that opens Chapter 18 of *End of Days* — the K-9 just ran out of steam. But a small sub that can go down to at least 25 Hz, if meekly, is certainly better than no sub at all. Monitoring the SPL with movies revealed that the K-9 had between 3 and 12 dB less output below 50 Hz, depending on its overall level.

At times, the K-9 had trouble keeping up with my main speakers' 6½-inch woofers. As the middle and high frequencies were increasing in level, the bass stayed

put, which shifted the tonal balance of the entire system upward. For instance, when I turned up the volume on Quincy Jones's "The Places You Find Love" from *Back on the Block* (Warner Bros.), the percussion took on a "tonk tonk" quality. And on programs with truly Herculean bass, such as the bass-head tracks, the K-9 went into gross overload, forcing me to turn the volume way down.

The MX-125 Mk II couldn't handle those tracks at top volume either — nor could any of the other subs here — but I could play them at healthy peak room levels of

around 100 dB without audible noise or distortion. The MX-125 took a decent stab at the 16-Hz organ fundamental in *Zarathustra*. While it couldn't do full justice to the fundamental tone, it did a fine job with the second harmonic, bested only by the Infinity Intermezzo and the Velodyne SPL-1200. It's not every day you hear a true 32-Hz note in your listening room — many people wouldn't even notice that the fundamental was missing.

## Polk Audio PSW250 and PSW650

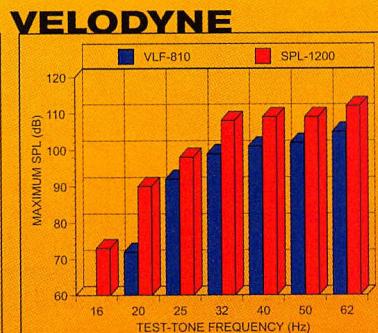
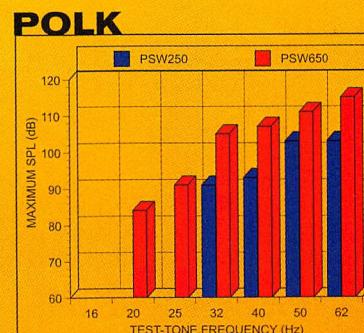
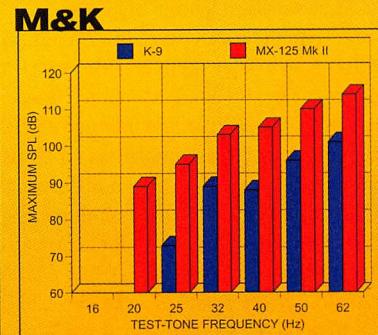
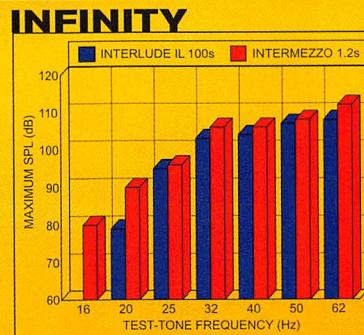
While neither has the last word in features, both Polk subs have all the essentials. The PSW650 is missing only a crossover bypass, but it makes up for it with a separate LFE (low-frequency effects) input that does exactly the same thing by taking the low-pass-filtered signal from a surround receiver or processor. It also has a switch that boosts output by 3 dB over its full bandwidth. Both the line- and speaker-level outputs have 80-Hz high-pass filters, and you can bypass the speaker-level filter. (As with the two Infinity models, though, the PSW650's output-level control is mounted on the front panel, which can be convenient or inconvenient depending on when

POLK PSW650	VELODYNE VLF-810	VELODYNE SPL-1200
40 to 123 Hz ±2.1 dB	32 to 101 Hz ±2.9 dB	27 to 90 Hz ±1.7 dB
20 Hz at 84.3 dB SPL	20 Hz at 72 dB SPL	16 Hz at 73 dB SPL
105.6 dB 115.2 dB at 62 Hz	100 dB 105.3 dB at 62 Hz	107.1 dB 111.6 dB at 62 Hz

so you can expect 2 to 3 Hz lower extension and 2 to 3 dB greater SPL there.

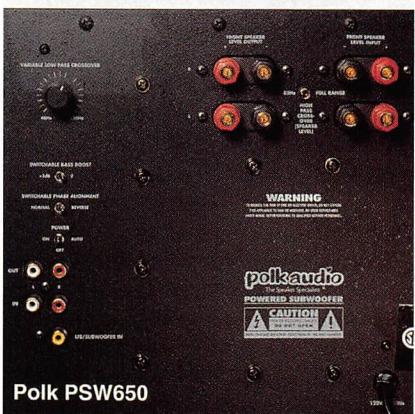
None of the eight subwoofers showed any signs of damage during my testing, although the M&K MX-125 Mk II did emit a suspicious smell (probably of melting voice-coil glue) during the most severe portion of the listening test. Thanks to internal clipping detection and limiting and protection circuits, however, you'll rarely have to worry about blowing out any powered sub.

Finally, I stacked each pair of subs from a given manufacturer, placed them in the best corner of my listening room, connected them to a QSC ABX Comparator, and used the DRA Labs MLSSA acoustic analyzer and a calibrated microphone to carefully match each sub to my 7.1-channel reference system and then compared each pair, using DVD movie soundtracks and music CDs, at the Dolby 0-dB reference level. To avoid overload, however, I often had to reduce the level control by 3 to 20 dB for the more robust programs. — T.N.





Polk PSW250



Polk PSW650

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you need to use it.) The PSW250 lacks high-pass filtering, line-level outputs, and a crossover bypass, but most of the time you can get around that by simply setting the variable crossover to its highest setting. In other words, it's not a big deal.

As with the M&K subs, there's a marked difference in size between the two Polk models. The PSW650's cabinet houses a pair of 10-inch drivers, while the PSW250 has only a single 8-inch driver, so I wasn't too surprised to find a big difference in how much bass they could crank out, especially with demanding program material. During the subway scenes from *The Matrix*, *End of Days*, and *The Jackal* (Chapter 27), the PSW250's SPL in the 25- to 40-Hz range measured as much as 16 dB lower than the PSW650's. The 'copter whips, aftershocks, and subway rumble in *The Matrix* had less impact, and the film's musical score had noticeably more bass with the PSW650.

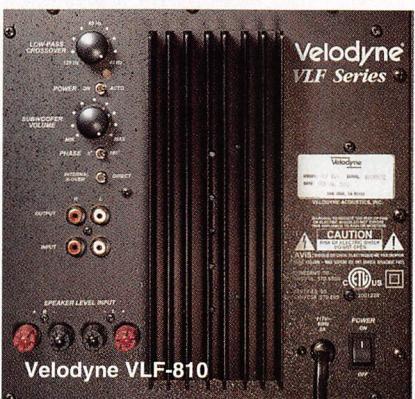
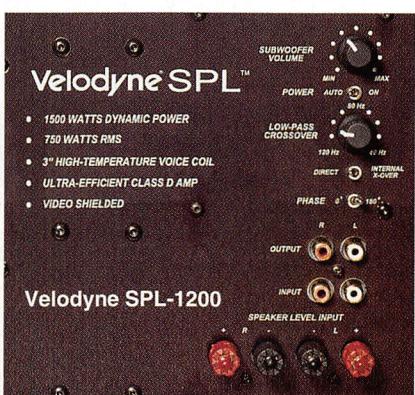
Like the M&K K-9, the PSW250 wasn't able to keep up with those killer bass-head CD tracks, but it performed surprisingly well for an entry-level sub. The PSW650 also did surprisingly well for its price on super-low material like the *Zarathustra* or-

gan tone, but it was no match for the Infinity Intermezzo or Velodyne SPL-1200. A subwoofer that goes all the way down will make the first dinosaur stomp in "Jurassic Lunch" feel like a bulldozer just slammed into your house. With the PSW650, where most of the power is devoted to the upper half of the 25- to 62-Hz bandwidth, it sounded more like a low groan. To be honest, there aren't many subs in the world that can pull off this effect well, nor many that can produce an honest 85-dB SPL at 20 Hz with low distortion.

## Velodyne VLF-810 and SPL-1200

Both Velodyne subs are similar in size and weight — the SPL-1200 is actually smaller than its half-as-expensive compadre — and they have identical, fairly complete feature sets. The line outputs for both have fixed 80-Hz, 6-dB-per-octave high-pass filters.

Though the VLF-810 has an 8-inch driver and the SPL-1200 a 12-incher, both go deep enough to be considered true subwoofers. The VLF-810 could do 20 Hz with low distortion, while the SPL-1200



**Velodyne Acoustics**, Dept. S&V, 1070 Commercial St., Suite #101, San Jose, CA 95112; [www.velodyne.com](http://www.velodyne.com); 408-436-7270

was able to hit an impressively deep 16 Hz. The SPL-1200 achieved significantly greater SPLs than the VLF-810 at lower frequencies, but the cheaper sub's passive radiator managed to maintain a graceful rolloff even with severely low frequencies. (Because it allows enclosure tuning that is impossible with a conventional port — and is less likely to start making rude noises as it approaches overload — a passive radiator can be very effective in a subwoofer.)

With program material like *End of Days*, the VLF-810 produced 6 to 12 dB less SPL below 35 Hz than the SPL-1200. Translated, this means the VLF-810 had noticeably less impact and floor-shaking power than its big brother. On the very demanding "Jurassic Lunch," though, the VLF-810 didn't begin to voice any complaints until the sound-level meter registered a bone-crunching 105 dB — impressive for a \$550 subwoofer! Both Velodynes did well with the *Zarathustra* organ pedal, although the SPL-1200 handled it with more authority thanks to its greater output power and more even distribution of that power.

In fact, the SPL-1200 sounded great on practically everything. When I ventured underground with *The Matrix*, *The Jackal*, and *End of Days*, the SPL-1200 put me in the subway, surrounding me with heavy ambient sound, shaking my floor and rocking my chair. While the "impending doom" dino stomp at the beginning of "Jurassic Lunch" came out as more of a growl than a house mover, the SPL-1200 rendered this just about as well as some "high-end" subwoofers that cost a lot more. Given its size, the SPL-1200 is one remarkable sub.

## Bottoms Up

Take the subway long enough, and you'll come across just about every kind of person there is. Write about subwoofers long enough, and you'll experience every kind of bass performance at just about every price. So how did these pairs of subs from Infinity, M&K, Polk, and Velodyne fare?

Two of the four subs in the lower price tier — the Polk PSW250 and the M&K K-9 — have such limited output at the lowest frequencies that they're arguably not subwoofers at all. But both are excellent woofers with distinct advantages: the Polk costs only \$300, and the \$550 K-9 is about the size of a bread box. If you're short on either cash or space, and don't demand the loudest and deepest bass, one or the other could be right for your home theater.

On the other hand, the two remaining entry-level subs — Velodyne's \$549 VLF-



*The Jackal* features the mother of all subway scenes. A good subwoofer will give you lots of deep rumbling followed by an aftershock that will press you back in your chair.

810 and Infinity's \$499 Interlude IL 100s — do qualify as true subwoofers because they can play down to 20 Hz with low distortion, albeit at lower SPL levels when compared with their big brothers. But even here, the Interlude managed to hit a very respectable 79 dB SPL — and it's one of the best looking subs in the lot.

Stepping up to the subwoofers in our higher price tier gets you bass that is louder and, in some cases, lower. All four models — the Polk PSW650 (\$770), Velodyne's SPL-1200 (\$1,399), the Infinity Intermezzo 1.2s (\$1,800), and M&K's MX-125 Mk II (\$1,199) — hit average SPLs in the 25- to 62-Hz range that exceeded 105

dB, which means they're capable of producing bass that's as loud as what you get at your local movie theater! And if you're looking for a relative bargain, Polk's PSW650 costs \$430 less than the next sub in the bunch. (That its amplifier is rated at only 165 watts, while the Intermezzo 1.2s and SPL-1200 are rated at 750 and 850 watts, respectively, only shows that amp specs often have little to do with subwoofer performance.)

If the very deepest, subterranean bass is what you crave, then you'll have to turn to the most expensive subwoofers in this group — the Infinity Intermezzo 1.2s and the Velodyne SPL-1200. Both can reach all the way down to a bone-rattling 16 Hz, performance that will have you running for cover the next time you pop *End of Days* or *The Matrix* into your DVD player. And while the Velodyne was able to play slightly louder than the Infinity in the critical range where you'll find most bass, at 16 Hz the Infinity was able to outrumble the Velodyne by a healthy 7 dB. Now that's a subwoofer!

S&V

## SEVEN MORE WAYS TO BREAK YOUR LEASE

In last year's "Bargain Bassment" (May), I described 16 CD and DVD tracks you could use to give your subwoofer a real workout. Here are seven more discs you can add to the list.

### CDs

● **Quincy Jones, Back on the Block** (Warner Bros.), "The Places You Find Love." This track has bass lines at two different levels. You might be familiar with the song, but unless you've had real bass in your system, you've probably never heard the strong 35- to 40-Hz segments. They should really open up the soundstage.

● **Bass Connection, Drivin' Bass (Neurodisc), "Pure and Perfect Bass."** This track sweeps way, way down in frequency at a very high level, creating infrasonic content that will truly tax your subwoofer. Played on my reference sub (120 dB SPL from 12 to 62 Hz with less than 10% distortion), it excites the 12-Hz structural resonance of my house. Use with care.

● **Virgil Fox (Laserlight), Bach's Toccata and Fugue in D Minor.** A true subwoofer will reproduce the 16- and 32-Hz fundamentals of Fox's organ with full force. Very few subwoofers can

produce 16 Hz with authority — only two of those reviewed here could do it — but the better subs will give you the full effect of a 32-Hz tone. Lesser ones will reproduce the second harmonic louder than the fundamental, making the sound seem higher in pitch and less full. Sometimes a very low note simply doesn't appear. Any good pipe-organ recording will display the same effects.

● **Yello, Flag (Uni/Mercury), "The Race."** Yello, a British band, has released several high-output electronic-music CDs. This track features high-level 30- to 50-Hz content. The instruments should hold their body at high levels, and the overall sound should powerfully fill your room.

### DVDs

● **End of Days (Universal), Chapters 17 and 18.** The subway scene in Chapter 17 has strong 25-Hz energy. Chapter 18 opens with a low, loud rumble with significant content down to 25 Hz that provides a good way to assess your sub's deep-bass prowess. A high-output sub will fill the room with sound, shaking the furniture and floor.

● **The Matrix (Warner), Chapters 32 and 33.** The helicopter crash in

Chapter 32 has plenty of high-impact sounds and lots of strong 25-Hz content. Chapter 33 has a good subway sequence, with fairly delicate dialogue and a ringing telephone as contrasts to the strong bass content down to 32 Hz, but the 25-Hz material is a little less dramatic than in Chapter 32.

● **DVD Space Spectacular (Delos), Chapter 1.** Recording engineer nonpareil John Eargle treats us to a full DVD of music performed by the Dallas Symphony conducted by Andrew Litton, who play Strauss's *Thus Spake Zarathustra* and Holst's *The Planets*. The subwoofer test passage is the opening 2 minutes of *Zarathustra* with its powerful 16-Hz organ pedal and exciting climax.

You also can't go wrong with the THX trailer that shows up on many THX-certified DVDs — chances are you have one in your collection. Just a dark blue screen with the THX logo in the center, the trailer has a marvelous wall of sound that simultaneously swoops up and down, culminating in a huge burst at 30 Hz. A really good subwoofer will make your whole room come alive with bass energy while playing this. — T.N.

Two new projectors  
show off the dazzling  
potential of Digital  
Light Processing

# Seeing the

**T**elevision is something we all know and love — sometimes without good reason. Critics routinely argue that shows like *Temptation Island* and *WWF Smackdown!* have pushed us several steps down the evolutionary ladder, but people still watch them. One thing that *has* evolved is the technology for displaying video images. We're all familiar with the classic cathode-ray tube (CRT), an analog technology that's been around since TV's earliest days. The CRT served us well for over 50 years, but in this digital era, when video can be broken down into ones and zeros and routed through countless conduits, it's become something of a dinosaur.

Enter Digital Light Processing (DLP), a video display technology based on the proprietary Digital Mi-

cromirror Device (DMD) from Texas Instruments. Though DLP has been around for a few years, it's only recently started to gain recognition as movie theaters contemplate a move away from traditional film projection. A handful of theaters installed DLP systems to project the much-hyped *Star Wars: Episode I – The Phantom Menace* when it was released in 1999, and it continues to gain momentum. Worldwide, 30 theaters had made the switch at this writing in late March (see "DLP's Bigger Picture" on page 86).

DLP is now starting to show up on the home front in the form of front and rear projectors. The advantage of a DLP-based display is that the video signal remains in the digital domain from the moment it enters the set until it's reflected as light onto the screen. DLP's fully

PHOTO ILLUSTRATION BY JAYME THORNTON

by Al Griffin



# Digital Light



digital signal path not only holds the promise of higher-quality images than CRTs currently deliver but also makes it the ideal display technology for folks who want to mix up their TV viewing with videogames and Web surfing.

Compared with CRT displays, which generate images using high-voltage electron guns and bulky glass tubes, the technology behind DLP is elegantly refined. At

the heart of a DLP display is the DMD, an integrated circuit covered with an array of tiny mirrors. A lamp inside the set throws light at the DMD chip, and the mirrors pivot up to 50,000 times a second, switching between on and off states in which light is either reflected toward a projection lens or deflected toward light-absorbing material. The amount of time that each mirror, or pixel, reflects light at the lens

determines the pixel's brightness — that is, where it falls in the scale between black and white.

DLP displays handle color in two ways. In three-chip DLP projectors, which are found in movie theaters and a few ultra-expensive home installations, a prism splits the light from the lamp into red, green, and blue components. Each color is directed to a separate DMD chip, and the reflections are optically recombined before the image hits the projection lens. In less expensive one-chip models — the kind intended for home use — a rotating color wheel filters the light into red, green, and blue. Although the three separate beams are reflected off the DMD sequentially, the rate at which they flash onscreen is so fast that the eye perceives a full-color image.

When it comes to watching movies at home, DLP projectors improve in several areas on the performance of CRT projectors as well as the liquid-crystal-display (LCD) projectors that have become a popular alternative to CRTs. The most obvious benefit is image uniformity. With CRTs, brightness usually falls off as you move from the center to the edge of the screen — the farther you stray from the central viewing axis, the worse it gets. LCD projectors are also prone to color shifting, where the same colors in the image vary in hue on different areas of the screen. With DLP projectors, brightness and color remain consistent over the whole screen whether you're sitting dead center or off to one side of the couch.

DLP also offers near-perfect convergence and image geometry. Both front and rear CRT projectors require three tubes to beam images onto a screen — one each for the red, green, and blue components of the video signal. Unless each tube's output is perfectly converged with the others, you'll see color fringing, or "halos," on the edges of objects and text. Since DLP projectors use a single lens, you don't have to worry about convergence errors. As shipped from the factory, CRT projectors often display poor image geometry — an uneven ratio of width to height, or vice versa, at the edges of the screen. But since the spacing of the mirrors (pixels) on a DMD chip is fixed, DLP projectors have perfect geometry at both the center and edges of the screen.

While DLP has significant advantages over both CRT and LCD projectors, there's still one key area where Texas Instruments needs to improve the technology. Although DLP projectors deliver exceptionally bright images, their contrast ratio — the range

## DLP'S BIGGER PICTURE

**D**igital Light Processing (DLP), the technology developed by Texas Instruments (TI), may be finding its way into home theaters, but it could make its biggest splash on the screen at your local megaplex. While several companies — including JVC and Sony — have been racing to develop digital systems that blast high-definition video onto large movie screens with the brightness and contrast of film projectors, DLP remains the only proven technology.

Since spring 1999, when George Lucas demonstrated DLP's commercial potential by successfully charging audiences to view *Star Wars: Episode I — The Phantom Menace* on a DLP system, TI has refined its prototype theater projector to improve both contrast — still DLP's primary weakness compared with film — and color accuracy. About 30 DLP Cinema projectors, including 14 in the U.S., are operational at movie theaters worldwide at this writing, all part of a market test supported by TI, Technicolor, Disney, and various theater chains (visit [www.dlpcinema.com](http://www.dlpcinema.com) for locations). Digital engagements of major movies — mostly Disney productions, either animated features or films transferred to high-def video — are run periodically and are open to anyone for the price of a regular ticket. More than a million moviegoers are already said to have seen the light, so to speak, of digital projection, the benefits of which include pristine, scratch-free images for every show instead of the progressive degradation of film prints.

Meanwhile, industry volunteers working under the aegis of the Society of Motion Picture and Television Engineers (SMPTE) are nearly two years into developing a comprehensive open standard for digital cinema. It might be a couple more years before the full

standard is in place, but that hasn't stopped TI-licensed manufacturers Barco, Christie, and Digital Projection Inc. (DPI), owned by Imax, from releasing production-line DLP Cinema projectors. Though most are slated for postproduction and video-transfer facilities, DPI recently began supplying the first commercial DLP Cinema projectors to a theater chain in Japan. Others could turn up soon in the U.S., in small networks of art-house digital theaters showing independent movies.

Just don't expect a revolution overnight. It could take a decade or longer to convert most of the existing screens to digital projection, and getting started is no simple matter. Mainstream Hollywood is still at odds over who will pay for the digital installations, which can cost as much as \$125,000 — about five times the price of a film projector. The studios stand to gain the most from digital projection: they spend as much as \$800 million each year creating and shipping film prints, which would be replaced by inexpensive optical discs or satellite/fiber-optic distribution. And many theater chains are in bankruptcy or teetering after recent megaplex building sprees and so-so box-office receipts in 2000.

And, of course, there are still those who question whether the quality of digital projection today even warrants the effort. George Lucas, who helped push the industry to this watershed, is not among them. "I've always been extremely concerned about the quality of film presentation, and this, as far as I can tell, is the largest leap forward in overall quality," he says of digital projection. "I think it would help filmmakers enormously in terms of having their films be seen as most of my friends would like them to be seen."

— Rob Sabin

between the whitest white and the blackest black — falls short compared with CRTs, which can deliver deep blacks and fine gradations of gray. Shadow areas in DLP projections appear to taper off at the threshold of true black. That's why the images tend to have less depth and dimensionality than those of their tube-based brethren.

But Texas Instruments is working to improve DLP performance. The company recently developed a DMD with a 16:9 aspect ratio and has struck deals with Hitachi, Mitsubishi, and Panasonic to use it in widescreen HDTV sets. And the company's next round of efforts will focus on extending DLP's contrast ratio — a feat it hopes to pull off by increasing the absorption of stray light from the individual mirrors on the DMD. Once contrast is improved, even the fussiest of videophiles may be hard pressed to find fault with the technology. DLP's future is so promising that even Sharp, a company long identified with LCD development, has licensed the technology. According to Sharp, its first DLP product — a front projector employing the same 16:9 DLP chips found in widescreen rear-projection TVs — will be available sometime this summer.

To get a handle on what kind of DLP displays are out there and how they perform, we rounded up a widescreen rear-projection HDTV monitor from Hitachi and a front projector from Runco. With prices well in excess of ten grand each, these products aren't aimed at casual TV watchers but at video enthusiasts who like to be on the cutting edge. But don't be scared off: both represent the state of the art in video technology, and that always costs more. As with plasma TVs, which are slowly becoming more affordable, prices for DLP projectors will come down.

## Hitachi's DLP Rear Projector

With its silver case and glassy, sculptured stand, Hitachi's first DLP projection set looks good even when it's turned off. The 55DMX01W has a 55-inch (diagonal) 16:9 aspect ratio screen and converts all incoming video signals, including 480i (interlaced) and 480p (progressive) standard definition and 1080i high-definition digital TV, to the native 720p resolution of its DMD chip. The set also displays XGA, SVGA, and VGA signals from a connected computer, so you can use it to surf the Web or play games on CD-ROM and DVD-ROM.

It might be an example of cutting-edge technology, but the Hitachi set has also been outfitted with many traditional TV

features and functions. There's a wealth of connections, including two wideband component-video inputs and two VGA jacks for computer signals. The remote control has a partially backlit keypad. While I eventually got used to working with it, the many buttons on the remote intimidated me at first.

With no convergence controls to mess with, setting up the Hitachi was a cakewalk — just turn it on, and you get a crisp image with perfect geometry and focus. A company representative encouraged me to engage the set's Movie mode before any critical viewing because that turns on the upconverter's 3:2-pulldown feature — an important detail the manual fails to mention. (This feature eliminates artifacts that result from transferring 24-frame-per-second, or fps, film to 30-fps video.) After selecting the Movie mode and Warm color-temperature setting, I adjusted the picture controls with Ovation Software's *Avia* DVD. The Hitachi's picture at this point measured pretty close to the 6,500-K NTSC standard, but an additional half hour of tweaking via the service menu brought it up to perfect spec (see "In the Lab," page 88).

When I played *The Fifth Element*, one of my standard reference DVDs, I was impressed by the Hitachi set's excellent color rendition — flesh tones were dead-on accurate, and heavily saturated colors (like Leeloo's orange hair) came across vividly but without any softening of detail. With 3:2 pulldown engaged, the set's upconverter was a force to be reckoned with. In shots with vertical camera motion, straight lines looked completely solid, without any of



As projected by the Runco VX-1c, the bloody battle scenes in *Gladiator* are so crisp, lifelike, and large, it feels like you're sitting beside Emperor Commodus in the Colosseum.

the stair-step artifacts that the line doublers in many other HDTVs introduce.

When I switched over to the murky opening scenes of *Gladiator*, however, I was given a taste of DLP technology's current limitations. As the Roman warriors waged battle in the forests of Germania, the shadowy landscape came across as a flat, uniform dark gray, with no deep blacks. The compressed contrast range robbed the image of the 3-D illusion that came across so well in the movie's better-lit scenes.

When converting 1080i signals to the DMD's native 720p, the Hitachi generated a faint noise pattern visible on flat patches of color — a problem I corrected by setting our Dish Network 6000 HDTV tuner to convert all incoming signals to 720p. Displaying a high-def satellite transmission of *The Talented Mr. Ripley*, the Hitachi did a credible job of rendering the detailed wall decorations in the hotel Ripley checks into after assuming his murdered friend's identity. Unfortunately, the set had the same limitations with HDTV that I had observed with DVDs — reduced contrast in scenes containing lots of shadows. One workaround I discovered was to increase the level of ambient light in the room, which helped to improve the set's apparent contrast. Although I'm used to watching movies in fairly dark rooms, I can't say that I minded the light. For once

**Hitachi 55DMX01W**

**KEY FEATURES**

- 55-inch (diagonal) 16:9 aspect ratio screen
- Converts all incoming video signals to 720p format
- Displays XGA, SVGA, and VGA computer signals

**DIMENSIONS** 51½ inches wide, 40 inches high, 24 inches deep

**WEIGHT** 202 pounds

**PRICE** \$12,995

**MANUFACTURER** Hitachi Home Electronics, Dept. S&V, P.O. Box 3900, Peoria, IL 61612; [www.hitachi.com/tv](http://www.hitachi.com/tv); 800-448-2244



I could find the remote without groping about like a blind man.

If Digital Light Processing is TV's destiny, the Hitachi 55DMX01W rear-projection TV is a promising sign of things to come. Not only will it look great sitting in your living room, but it delivers exceptionally bright, finely detailed images and accurate color.

## Runco's DLP Front Projector

Who invented home theater? Although lots of companies would like to claim to have been the first to deliver a taste of the movie theater experience in the home, a good case can be made for Runco. As far back as 1991, the company pioneered aspect ratio control for CRT front projectors so that widescreen movies on laserdisc could be viewed at home in a theatrical format. With widescreen HDTVs on the market now, aspect ratio control is something we take for granted, but when Runco first developed it, it was a revolutionary idea.

A decade later, Runco is still pushing the home theater envelope with DLP projectors like the VX-1c, which includes the outboard VHD video processor/aspect ratio controller. Licensing agreements previously prohibited Texas Instruments from selling 16:9 aspect ratio DMDs to front-projector manufacturers, but that didn't stop Runco, which developed a neat work-around in the VHD. The VX-1c's 4:3 aspect ratio DMD has a native resolution of 1,024 x 768 pixels. If the projector is mated with a screen that has a wide aspect ratio, however, the VHD controller scales images down to a 16:9 area on the DMD's surface. This allows the VX-1c to operate like a native widescreen display, switching effortlessly between HDTV, anamorphic

widescreen DVDs, and standard 4:3 sources.

Although the VX-1c/VHD package consists of two separate, stylistically undistinguished pieces, the way they seamlessly communicate is a thing of beauty. A phone-type cable carries commands from controller to projector — press the power button on the controller's remote, and the entire system turns on. And once you've set up the projector on a table or the ceiling and aligned its lens with the screen, you can forget about it and turn your attention to the VHD controller.

Inputs on the VHD include composite-, component-, and S-video jacks. Although the component-video jack won't accept signals from a progressive-scan DVD player, the VHD's scaler, which features 3:2 pulldown for film-based video sources, performs as well as the best progressive-scan DVD players I've tested. A 15-pin VGA-jack pass-through input lets you connect an HDTV tuner, and there's an RGB+H/V output to the projector.

Having labored for hours setting up CRT front projectors in the past, I found getting the VX-1c to look good absurdly easy. After positioning it so its image filled a 92-inch 16:9 Da-Lite High Contrast Da-Mat screen, which is designed specifically for DLP projection, I selected the warmest setting on the projector's slider-type color-temperature control and used the *Avia* disc to adjust the picture settings on the VHD.

With the Runco VX-1c projecting *Gladiator*, I felt as though I was sitting beside Emperor Commodus in the Colosseum during the movie's bloody battle scenes — the image was *that* crisp, lifelike, and large. And the combined one-two punch of the VHD's clean video processing and the Da-Lite screen's contrast enhancement delivered satisfying shadows in the movie's dark opening scenes. Although the contrast wasn't as punchy as from the \$25,000 Runco DTV-991 CRT projector we use in our reference video system, the VX-1c's overall brightness was nearly

## IN THE LAB

HITACHI 55DMX01W  
(Warm setting, before/after calibration)

RUNCO VX-1C

Color temperature	HITACHI 55DMX01W (Warm setting, before/after calibration)	RUNCO VX-1C
Low window	NA/6,555 K	9,470 K
High window	6,840/6,567 K	NA

**Brightness** 70/53.5 ftL 8.0 ftL

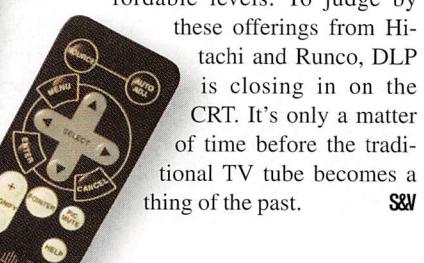
Precalibration measurements for both the Hitachi and Runco were made after initial adjustments with the *Avia* test DVD. Prior to calibration, the Hitachi's Warm preset measured close to the NTSC 6,500-K standard on the high (100-IRE) window, but its low (20-IRE) window was somewhat deficient in green. I'd recommend getting a professional to perform grayscale calibration. Contact the Imaging Science Foundation to locate a certified technician in your area (561-997-9073, [www.imagingscience.com](http://www.imagingscience.com)). After calibration, grayscale tracking was excellent, ranging  $\pm 100$  K at each 10-IRE step between 20 and 100 IRE. The Runco VX-1c features a single global color-temperature control for both the high and low end of its grayscale. At its warmest setting, the projector displayed a bias toward blue. — A.G.

double — and that's with an even larger screen than we normally use!

On the other hand, the projector could use a little improvement with its color rendition. It has a single global color-temperature control, so there's no easy way to achieve a precise grayscale. I found the colors vibrant and reasonably accurate in both the *Gladiator* DVD and the high-def satellite transmission of *The Talented Mr. Ripley*, but in a few scenes the flesh tones were a bit too orange.

Runco's VX-1c/VHD controller combo is a great choice if you want the ultra-big-screen experience of a front projector along with DLP's simplicity and eye-pleasing brightness. The VHD controller in particular deserves praise for its seamless integration with the VX-1c projector. I was also impressed by its high-quality scaling and the clever way of adapting the projector's native 4:3 aspect ratio DMD for wide-screen display. CRT-based projectors might still dominate home theater's high end, but with the arrival of DLP projectors like the Runco VX-1c/VHD system, that could soon change.

Will your next TV be a DLP projector? That depends on the progress Texas Instruments makes in getting the word out about its technology and getting the price of DLP displays down to more affordable levels. To judge by these offerings from Hitachi and Runco, DLP is closing in on the CRT. It's only a matter of time before the traditional TV tube becomes a thing of the past.



### Runco VX-1c/VHD

#### KEY FEATURES

- Outboard VHD controller compatible with standard and HDTV signals
- Can use VHD remote to operate both VHD and projector
- Scales both widescreen and 4:3 aspect ratio sources for 16:9 display on wide projection screens

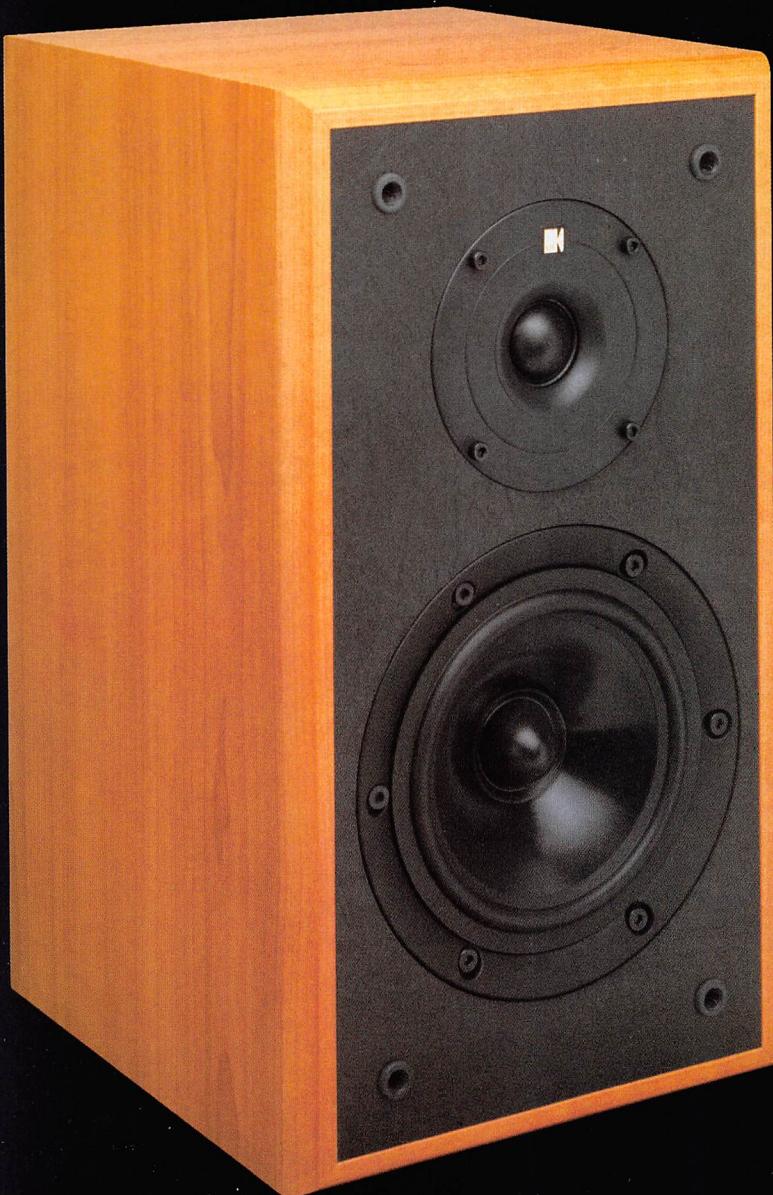
**DIMENSIONS** VX-1c projector, 14½ inches wide, 5¾ inches high, 18½ inches deep; VHD controller, 17½ inches wide, 1¾ inches high, 11 inches deep

**WEIGHT** VX-1c projector, 21 pounds, VHD controller, 7½ pounds

**PRICE** \$16,995

**MANUFACTURER** Runco, Dept. S&V, 2463 Tripaldi Way, Hayward, CA 94545; [www.runco.com](http://www.runco.com); 800-237-8626

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October 1999. Group Test Winner



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No wonder the sound is so "immensely involving". No wonder the bass response has such "fine weight and impressive power". Concluding that "we rate these speakers very highly indeed", the reviewer summed it up in two words: "a steal".

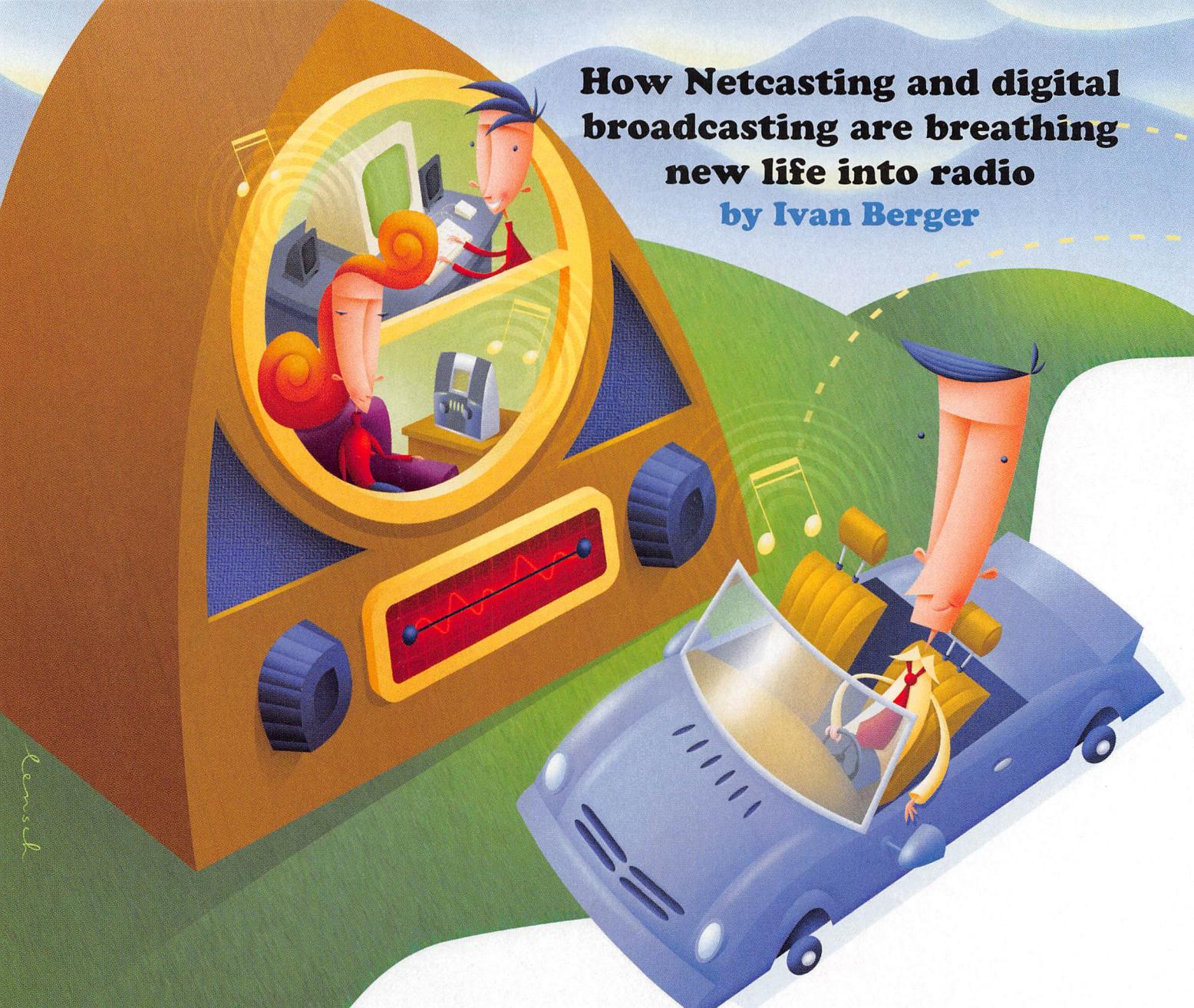
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The experience  
of sound



## How Netcasting and digital broadcasting are breathing new life into radio

by Ivan Berger

# radio reborn

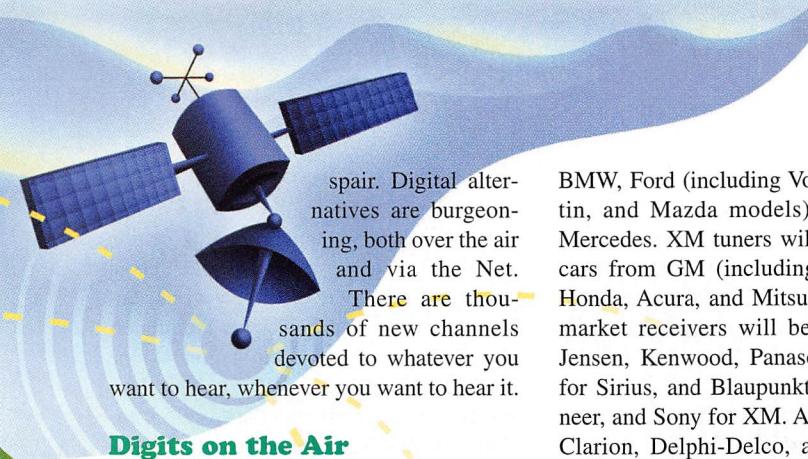
**R**adio might be more lucrative today than in the days before TV, but it was richer then. The airwaves hummed with music, drama, sports, variety shows, soap operas, comedy, live newscasts of important events, quiz shows, children's shows — you name it. Even the musical choices were richer: As a kid in Connecticut, I could get not just the usual pop songs but big-band swing, jazz, and the classics from nearby stations and country music from WWVA in faraway West Virginia (clear-channel AM carried a long

way then). There were Red Sox and Yankees games and Friday-night fights on the network stations, and current pop hits from local stations in every town big enough to have one. Every station but one on my dial had commercials — but they were so few and far between that you could tune at random and be almost certain to catch actual programming, not ads, no matter where you stopped.

During the '50s and '60s, TV pretty much drained everything from radio but music and talk, but at least the mix of mu-

sic remained eclectic and commercials remained few ("FM stands for 'Forget money,'" quipped '60s cynics). The airwaves were full of independent stations, each one transmitting whatever its owner's sensibilities dictated. Then radio became Big Business, and the bean counters took over. Individuality gave way to tightly controlled formats. The airwaves became uniform, predictable, and boring.

Today, there are more stations but even fewer choices — that is, if you listen to conventional AM and FM. But don't de-



spair. Digital alternatives are burgeoning, both over the air and via the Net.

There are thousands of new channels devoted to whatever you want to hear, whenever you want to hear it.

### Digits on the Air

The clearest sound will come from digital radio broadcasting. Two companies, Sirius ([www.siriusradio.com](http://www.siriusradio.com)) and XM Radio ([www.xmradio.com](http://www.xmradio.com)), are using satellites to bring listeners near-CD-quality music and talk from coast to coast. Starting this summer, each will offer up to 100 channels, with terrestrial repeater transmitters filling in the spots the satellite signals can't reach. Both systems will let you drive from Maine to San Diego listening to the same channel without touching your radio even once.

You'll have to pay \$9.95 a month to subscribe to either service, but all of Sirius's music channels, and most of XM's, will be commercial-free, and you'll get more than just an upgrade in sound quality. Both services promise specialized content that's constantly on tap, including plenty of stuff you can't pick up now even if you live in a big city. On the music side, both will offer blues, classical, pop, jazz, Latin, hip-hop, reggae, dance music, oldies, gospel, and country — generally with several flavors of each. Both will also offer wide choices of news programs, plus financial news, children's programming, sports, comedy, and ethnic programming.

Sure, this is still corporate radio — but the XM and Sirius business models ensure diversity. A corporation buying a minority-taste broadcast station will usually reduce on-the-air variety by reprogramming it to whatever's most popular in the area — talk, pop, or rock. But a corporation selling 100 channels by subscription can make more money by offering enough diversity so that everyone, even those with esoteric tastes, will want to hand the money over. The companies figure that just as people now pay cable-TV companies for better reception and more varied programming, they'll pay for the same benefits with radio.

Initially, most satellite receivers will be in cars, where radio already reigns. You'll be able to get cars with Sirius tuners from

BMW, Ford (including Volvo, Aston Martin, and Mazda models), and Chrysler/Mercedes. XM tuners will be available in cars from GM (including Saab models), Honda, Acura, and Mitsubishi. And aftermarket receivers will be available from Jensen, Kenwood, Panasonic, and Sanyo for Sirius, and Blaupunkt, Motorola, Pioneer, and Sony for XM. Alpine, Audiovox, Clarion, Delphi-Delco, and Visteon will offer receivers for both. You'll need to buy separate radios as well as separate subscriptions for Sirius and XM — radios that can receive both are still a few years away.

So far, the Sony DRN-XM01 is the only XM receiver announced for home use, and it's a hybrid model that can be docked in an AC-powered sleeve at home or a 12-volt sleeve in your car. The antenna it uses for home reception is less than a foot tall. Sharp is considering making a home XM receiver, but plans for it weren't final by our press time.

An alternative digital broadcast system, iBiquity, is now undergoing field trials and could be on the air in a couple of years, pending FCC approval. Unlike the satellite systems, it uses digital signals piggybacked on existing FM and AM local broadcasts. (You'll need a new receiver or tuner to pick up the signals, though.) The company says this would give you FM-quality sound from the AM stations and CD-quality sound from the FM stations.

### The Internet Alternative

You don't have to wait until XM and Sirius go on the air this summer to get digital broadcasts, however. You can get thousands of programs right now, via the Internet.

Globally, more and more radio stations stream their programs on the World Wide Web, together with stations that exist only online and send no signals over the air. Streaming-audio programs that duplicate local radio broadcasts might seem redundant, but most of the world's stations are too far away for you to receive them over the air. Distance is no obstacle on the Web.

Somewhere out there — perhaps in another country, even on another continent — a radio station is playing something you'd really like to hear: a rare jazz recording, play-by-play coverage of your old college teams, news with a foreign slant, programming in languages you want some practice in. I'm lucky enough to be within range of FM stations from two major cities, but thanks to the Web I can also check what's playing on my old low-power college station 200 miles away, hear a rock station I

### Station Finders

Here are a few good portal sites, listed alphabetically with comments on a few especially interesting ones. When entering the URLs in your browser, don't add "www" to the ones that don't already have it. (As with all things "dot-com" these days, the status of these sites can change without notice.) — I.B.

#### [www.classicalwebcast.com](http://www.classicalwebcast.com)

Classical music only; a small but choice selection from more than two dozen countries.

#### [www.internetradiolist.com](http://www.internetradiolist.com)

Claims "2,024 stations and growing."

#### [www.internetradioindex.com](http://www.internetradioindex.com)

Links to 1,800 stations and is adding more.

#### [www.kerbango.com](http://www.kerbango.com)

Check out the "cool streams" list; includes links to other radio portals.

#### [www.live-radio.net](http://www.live-radio.net)

#### [mypage.bluewin.ch/a-z/cusipage](http://mypage.bluewin.ch/a-z/cusipage)

From Switzerland; has links to many stations and news sources.

#### [www.netradio.com](http://www.netradio.com)

Has 100 channels of its own.

#### [www.radio-locator.com](http://www.radio-locator.com)

A guide to broadcast and Web radio with links to more than 10,000 stations; formerly the MIT List of Radio Stations on the Internet.

#### [www.radio-on-the-internet.com](http://www.radio-on-the-internet.com)

Lists "Top 20" and "Bottom 20" stations.

#### [www.radio-stations.net](http://www.radio-stations.net)

Classified by continent and country.

#### [radio.yahoo.com](http://radio.yahoo.com)

Yahoo! Radio, with links to other Yahoo! sites.

#### [www.radiotower.com](http://www.radiotower.com)

Lists "only" 1,300 stations, but with a fairly full description of each one.

#### [rlbecker.terrashare.com](http://rlbecker.terrashare.com)

Good format selection; lists only stations heard on Web.

#### [www.vtuner.com](http://www.vtuner.com)

Has its own software; includes station ratings.

#### [www.web-radio.com](http://www.web-radio.com)

"Over 4,700 stations Webcasting online."

#### [www.webradios.com](http://www.webradios.com)

Includes online TV stations.

once visited in Helsinki, or listen to classical music on Great Britain's BBC 3 or Bartók Rádió from Hungary.

The fidelity, however, varies. Using good multimedia speakers and a broadband cable connection, I get mostly FM quality. With a 56-kilobits-per-second (kbps) dial-up modem, the frequency response is usually limited and the background noise higher. With

**Ivan Berger** was for many years technical editor of *Audio* magazine and now writes for a number of publications including *Wired* and *The New York Times*.



either connection, but more commonly with dial-up, I sometimes get interruptions and — mainly on signals from overseas — echoes or transient phase-interference and comb-filtering effects that give musical tones a swooshy quality and make voices sound muddy and robotic.

Without the Web, though, I'd have to receive those overseas stations via short-

wave, where the signal would sound worse and be mono only. All you need to listen in is a computer with a decent stereo sound system and an Internet connection (preferably broadband). Even the computer is optional, with new stand-alone Web tuners and sound systems (see "Hardware" below).

### Decisions, Decisions

You'll still have to find the stations, of course, when you use the Net, but that's

## Hardware for Web Listening

If your computer is in the same room as your audio system, you can get better sound simply by running a cable from your computer's sound card to your audio system's aux input. But this has its pitfalls: The sound card's digital-to-analog (D/A) converter might not be topnotch, and its output might include some of the electrical noise that ricochets around inside computers. Stereo-Link's Model 1200 (\$199), reviewed in January's "The PC/Stereo Connection," takes PCM digital output from your computer's USB port, runs it through a 20-bit D/A converter, then feeds it to your stereo system or headphones. With the right cables, the computer and audio system can be up to 50 feet apart.

If your computer and audio system are in separate rooms, you can add wireless links — such as those available for about \$100 to \$150 from companies like Jensen, Terk, and Turtle Beach — to send your analog audio to its destination. With most of these products, however, you have to run back to the computer to change streaming-radio stations or music playlists.

Better yet are components that let you hear and control your Internet listening from another room. Many are backed up by Web sites that help you find content. (Some of the sites require subscriptions, though.) Most of these devices will work with your stereo or home theater system. The AudioRamp iRAD-C (\$549), Harman Kardon DMC 100 Digital Media Center (\$899), and RCA Digital Media Manager (\$999) can

access the Web directly, whether you have a computer or not. (Some of these components and those that follow won't be out until later this year.)

Units that require a computer can be much less expensive. These include the Acer NeWeb iRhythm iR900-1 (\$120), AudioRamp iRAD-TC (\$249), Compaq iPAQ Music Center (no price yet), DigMedia DigRadio (no price yet), Lasonic DAS-750 (\$700 to \$2,000 depending on hard-drive capacity), and Turtle Beach AudioTron (\$300). Sonicbox offers a \$100 system (also reviewed in "The PC/Stereo Connection") that receives streaming audio from the Web via a PC and retransmits it to 900-MHz wireless headphones, powered speakers, or the system's portable remote receiver.

You can also buy stand-alone units with their own amps and speakers, such as AudioRamp's iRD-S (\$599) and RCA's Internet Radio (\$299). AudioRamp also makes a model that only works with a computer, the iRAD-TS (\$299). These units include AM/FM tuners, as do the Digital Media Manager and the DigRadio.

Because music downloading is wildly popular, all of these components will let you set up your own playlists of songs stored somewhere in your system. You can operate several of them simultaneously for listening in different rooms. The stand-alone devices can, of course, be tuned to different stations. And the Lasonic has multiroom facilities built in. — I.B.

not hard. What *is* hard is deciding which ones to listen to.

If you know the name of a U.S. station you'd like to hear, entering its call letters in your browser's address window will usually find it for you, whether it's a commercial, dot-com, or nonprofit station — one whose Web address, or URL (universal resource locator), ends with the ".org" extension. Not all stations with Web sites broadcast on the Web, but a growing number do. If you have an Internet service provider that uses proprietary software, like AOL or Earthlink, just entering "radio" as the keyword will probably bring you useful results. Entering the name of a foreign broadcasting system, such as "BBC," often works, too (though you might have to run together two-word names, such as "Kol Israel," like a single word).

More fun, though, is logging onto stations you've never heard of — including those that Webcast only. You can find plenty of specialized portal sites that classify stations by location or program type. Many also have hot links to other radio-search pages. I've found so many I've listed them in a separate box on the previous page, but even that just scratches the surface.

To find more, use any Web search engine. You'll get more hits than you have patience for (including duplicates and sites that don't provide streaming music). A search on Excite for "radio stations" yielded more than 58,000 hits!

Once you've found some promising stations, listening will require player software you might have already, such as RealPlayer or Windows Media Player, both of which also let you set up favorite-station lists. You can usually download whatever you need for free. You can also tune into services like www.listen.com that provide software. Just be sure to turn one program off before you switch to another, or you may hear two stations at once.



At its best, radio has an immediacy and an intimacy that TV can never match. But with few exceptions, commercial broadcasters have squandered that potential, turning their channels into stale, predictable cash cows. Digital satellite broadcasting and streaming audio from the Net could redeem radio's promise, once again involving listeners through varied and imaginative programming. Think about it — thousands of channels and *no* commercials. Maybe *this* will be radio's golden age.

S&V

**Acer**  
408-383-2789, [www.acerneweb.net](http://www.acerneweb.net)

**AudioRamp**  
949-789-1140, [www.audioramp.com](http://www.audioramp.com)

**Compaq**  
800-345-1518, [www.compaq.com](http://www.compaq.com)

**DigMedia**  
760-431-3500, [www.digmedia.cc](http://www.digmedia.cc)

**Harman Kardon**  
800-422-8027, [www.harmankardon.com](http://www.harmankardon.com)

**Jensen**  
407-333-8900, [www.jensenaudio.com](http://www.jensenaudio.com)

**Lasonic**  
781-272-4546, [www.lasonic.com](http://www.lasonic.com)

**RCA**  
800-336-1900, [www.rcainternetradio.com](http://www.rcainternetradio.com)

**Sonicbox**  
650-967-4842, [www.sonicbox.com](http://www.sonicbox.com)

**Stereo-Link**  
617-995-3500, [www.stereo-link.com](http://www.stereo-link.com)

**Terk**  
800-942-8375, [www.terk.com](http://www.terk.com)

**Turtle Beach**  
800-233-9377, [www.turtle-beach.com](http://www.turtle-beach.com)

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# HDTV'S BIG



Below, producer Craig Silver monitors CBS's high-definition broadcast of the NCAA Final Four basketball tournament from a truck parked outside the Minneapolis Metrodome.

**W**hen CBS and Mitsubishi invited me to watch the NCAA Final Four from courtside in the Hubert H. Humphrey Metrodome in Minneapolis and write about the high-definition TV (HDTV) broadcast, how could I resist? The men's college basketball tournament is old territory for me. The first time I went, Georgetown's 7-foot center Patrick Ewing collided with me, practically catapulting me into the stands. My second trip brought me up against an old high school friend, Temple's Tim Perry, who later went on to play for the New Jersey Nets. I even had my picture taken for *Sports Illustrated*.

No, I wasn't a college hoops player, and no, my team wasn't Duke or Villanova. I got my ride to the NCAAs as a cheerleader for Lehigh, a university whose strongest tradi-

tions were in wrestling and engineering. We were certainly *not* a basketball powerhouse.

But all that changed back in 1985 when Lehigh won our conference and received an automatic bid to the Big Dance. We squeaked in as the 64th seed — the only team in the field that had a losing record (12-18) — to find ourselves unmercifully pitted against the No. 1-ranked Georgetown Hoyas. We were trounced 68 to 43.

Miraculously, in 1988, "little Lehigh," as the press dubbed us, won the conference again and faced off against the top-seeded Temple Owls. We didn't win that game, either. We did play respectably, however, thank you very much, losing 87 to 73. But our NCAA glory ended right there.

What I remember most about those games was the incredible rush of walking into the huge arena, watching the stands



# DANCE

**How high-def brought home all the action at this year's Final Four**

by JAMIE SORCHER

fill up with friends and family, their faces painted brown and white (our school colors) and their arms waving huge signs like "Play Proud Lehigh!" I felt like we could accomplish anything, beat anybody!

I returned to the Final Four this past March to find out if watching the games in high-definition on a widescreen TV could equal the excitement of actually being there. Could it really convey the details that make the game come alive, like seeing the ecstasy on a player's face as he sinks a three-point shot right at the buzzer while the fans, the band, the cheerleaders, and the team mascot scream his name?

The Final Four is notorious for its wildcard unpredictability, soap-opera drama, and infectious hysteria. Consider some of this year's story lines: Maryland's first appearance in 100 years, Michigan State's quest to repeat as national champ, and Duke's drive to notch its third national title here at the Dome — the same place it won its second title back in 1992. The most heart-wrenching saga, though, was the Arizona Wildcats' attempt to win the trophy for their coach, Lute Olson, whose wife of 47 years — a regular fixture during the season's games — died earlier this year.

So how do you capture all this for armchair athletes at home? For the second year in a row, CBS Sports broadcast the Final Four in the 1080i (interlaced) high-def format. This year's broadcasts were sponsored by Mitsubishi, which has also backed high-def broadcasts of sports events like the U.S. Open and the Thanksgiving Day NFL games as a way to showcase HDTV.

"We want fans to understand the true difference they get when they watch a high-def production," Mitsubishi marketing director Bob Perry told me. "Because it delivers a more realistic picture [than standard TV], they're placed right in the middle of the action. They also get a wider perspective on the game and can see some of the



things going on at the edges that ordinarily they would simply miss."

The Final Four was broadcast simultaneously in both high-def digital and traditional analog using separate crews of pro-

ducers, directors, commentators, cameramen, and technicians. Eight high-def cameras were used: two at high midcourt, one in each end zone, one low-angle handheld camera under each basket, one in the high-def announcer's booth, and one "slash angle" camera positioned between midcourt and the end zone, which was used for replays. CBS's Craig Silver, producer of the





**Above, guests watch the game on a 46-inch Mitsubishi HDTV monitor inside the CBS suite. Below, author Jamie Sorcher rallies the Arizona Wildcats fans. Bottom, Jamie's appearance as a cheerleader at the 1985 tournament was captured in the pages of *Sports Illustrated*.**



**LEADING OFF**

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To offer a laughable legend of what could give, Jamie Sorcher learned that the world would get. Of course, what the world got, was a very private and bizarre abdominal jabs.

high-definition Final Four broadcasts, pointed out that it's the wide shots and extreme closeups that really show the advantage of HDTV over traditional broadcasts. "We can show all ten players and the entire court so you can see how a play develops. If you did that with standard TV the guys would look like ants. But we can also go to a low-angle shot and show a player's eyes with the sweat dripping off his forehead."

Along with my courtside access, I had a pass for the CBS suite right behind one of the baskets. The view was prime, but during the first part of the championship game between Duke and Arizona — a two-point nail-biter right up until the end of the half — I kept turning to watch the action on the 46-inch Mitsubishi HDTV monitor in the suite. The crisp, clear picture conveyed expressions of anguish and elation on the players' faces that were hard to make out or even see in the lower-resolution analog broadcast. And watching on HDTV made it a lot easier to see plays unfold. With regular TV, the same shots are often cropped so you can't even see the basket. Thanks to the set's wide 16:9 screen, I could see the reactions of the people in the crowd as well. When a player made both free throws, for instance, I could see the fans behind the basket screaming and high-fiving each other.

**C**ombine a sharper picture, a wider viewing angle, and graphics created specifically for high-def, and you've got a show with all the trimmings, right? But it wasn't always like this. Ken Aagaard, senior VP of operations for CBS, who first saw HDTV in action at a test broadcast of the 1984 Olympics in Los Angeles, reminisced: "As exciting as it was back then to see the feed from even one high-definition camera, it never went anywhere. Then, with CBS's first four NFL games in high-def back in 1998, we were able to create a fully integrated show. We had all the bells and whistles that we used in a standard analog

**Below, CBS VP of engineering and advanced technology Bob Seidel. Right, CBS announcers Gus Johnson and Dan Bonner. Bottom, coach Mike Krzyzewski and his players celebrate Duke's third national championship.**



broadcast. We could take six, seven, or eight high-def cameras, mix in effects, put up graphics, and add the clock and score. Finally it looked like a real show."

For the Final Four, Aagaard wanted to capture all of the color, from the great plays to the jubilant school bands to the fans with their painted bodies, fluorescent wigs, and strands of beads. "And there's lots of color here," he quipped. "Michigan is green and Duke is blue, and you've got Arizona and Maryland in red. Now, with HDTV, when you pan those stands you see those colors vividly." It was hard to miss the one Michigan State fan who, even though his team was eliminated Saturday night, showed up for Monday's final Arizona-Duke match painted green from head to toe.

But not only can you see the crowd's excitement — you can hear it, too. "The audio, of course, is just as important to us as the video," Aagaard said, which is why we've moved to [digital] surround sound in the last year." While the sound for the regular broadcasts was in the Dolby Surround analog format, the sound for HDTV was done in the superior Dolby Digital format, but with four channels instead of the 5.1 used in theaters and on many DVDs.

"We used four channels for the high-definition broadcast," explained Bob Seidel, VP of engineering and advanced technology at CBS, "three across the front with a mono surround channel in the rear. We chose not to have discrete surround channels — or a low-frequency-effects or 'rumble' channel because there's not a lot of deep-bass action in a basketball game." The CBS engineers mixed the sound to put the viewer at midcourt, with the announcers mostly in the center channel, he said.

As you might expect, HDTV makes it easier for the announcers to call the play-



by-play action. "High-def gets you so up-close and personal to the athletes that it drives the commentary,"

said CBS announcer Gus Johnson during the pregame setup. "At last year's Michigan State championship game, the high-def cameramen took some closeup shots of Mateen Cleaves, and I remember making a mental note that I could really see the sweat and intensity on this guy's face in the last 5 minutes of the game. So it gave me more things to talk about, more things to describe. It helped me build the moment.

"As an announcer I want to paint that picture. I want to tell the viewers, 'Okay, he's a senior, this is for the national championship. All his life, as you can see from his face, this is what he's wanted — and he's 5 minutes away from it!' That's the story I'm telling, and HDTV has helped me do that better than standard TV."

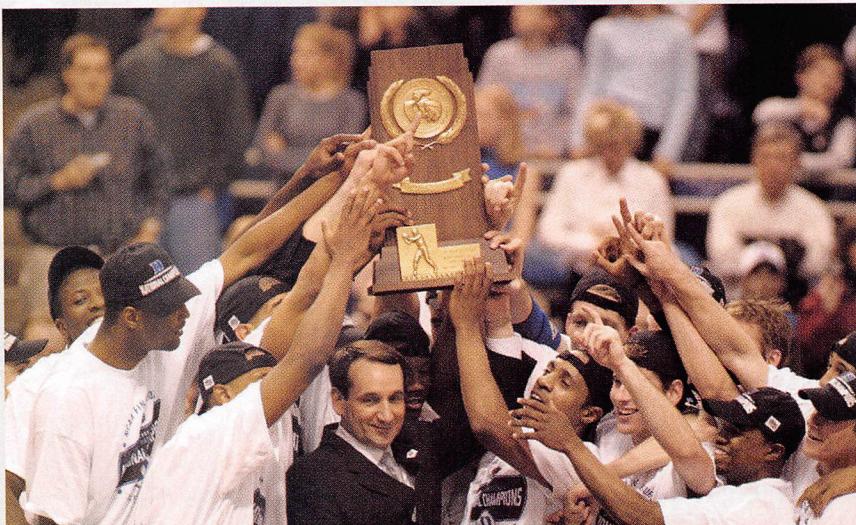
**C**BS has done more than any other network — way more — to spread the word about HDTV. It currently broadcasts more than 1,000 hours of program-

ming a year in high-def, mostly prime-time series and major sports events. Currently 37 of the network's more than 200 stations are broadcasting in digital, covering 48% of the nation. By the end of 2001, CBS expects to be transmitting digital programming across more than 75 stations, reaching more than 68% of the country.

Mitsubishi plans to continue its support of CBS's efforts to spread the word about HDTV, Perry said. "It's the 16:9 screen and a picture with six times higher resolution that make high-def very attractive. That's why we're making this investment during the early days of HDTV — to help drive the technology."

Don't worry if you missed this year's NCAAs. The road to the 2002 Final Four ends in Atlanta, and there's no telling who could make it to the Big Dance by then. Even "little Lehigh" could turn up. (Hey, you never know.) But if you can't see the game live, plan to watch it on an HDTV set — even if you have to make friends with someone who has one. Not to sound like that corny commercial, but high-definition really is the next best thing to being there.

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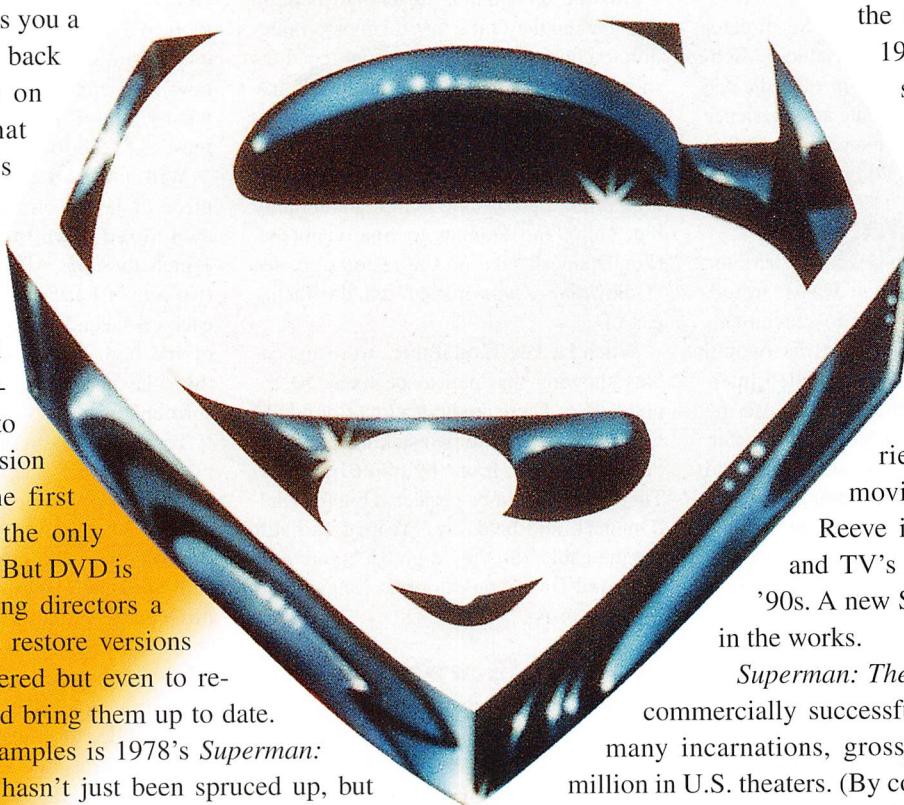
# SOUPED-UP SUPERMAN

**The special-edition DVD makes the Man of Steel  
fly in a new millennium** by Josef Krebs

**L**ife rarely gives you a chance to go back and improve on something that you've done. This used to be especially true of the movies, where economic pressures and the audience's fond memories of favorite films combined to ensure that the version you saw during the first release would be the only one you'd ever see. But DVD is changing that, giving directors a chance not only to restore versions the studios had altered but even to rework their films and bring them up to date.

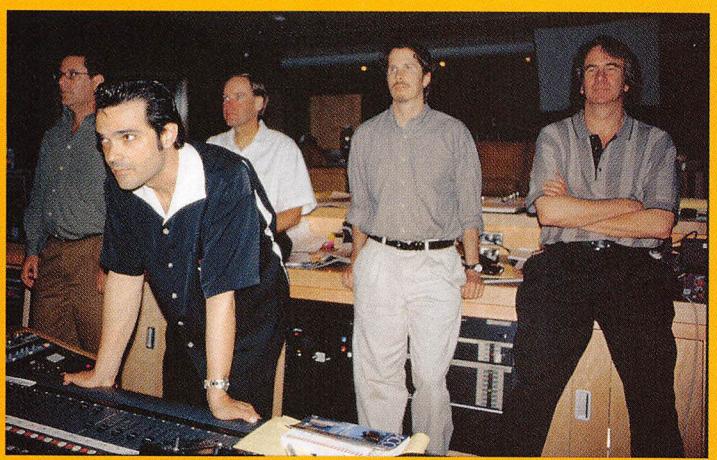
One of the best examples is 1978's *Superman: The Movie*, which hasn't just been spruced up, but taken to a whole new level for its DVD release.

A perfect mix of miracle-performing Christ figure and boy next door, Superman was the first superhero, and he remains the most popular. Gaining worldwide success with



the first comic books in 1938 and the newspaper strips that followed, the Man of Steel went on to spawn a radio show, a series of Dave and Max Fleischer cartoons in the '40s, the George Reeves Superman movies and TV series in the '50s, four movies with Christopher Reeve in the '70s and '80s, and TV's *Lois & Clark* in the '90s. A new Superman film is now in the works.

*Superman: The Movie* was the most commercially successful of the superhero's many incarnations, grossing more than \$134 million in U.S. theaters. (By comparison, *Star Wars*, which was still in its first run at the time, made close to \$323 million, while *Close Encounters of the Third Kind* raked in about \$128 million.) But the movie's resonance goes well beyond its appeal as escapist fun. Just con-



**The *Superman* restoration team adds new sound effects to the scenes on the planet Krypton. Right, L-R: supervising sound editors Bernard Weiser and Jay Nierenberg, music editor Robert Garrett, Warner DVD programming director Paul Hemstreet, and the DVD's producer, Michael Thau.**

sider the way people reacted to the crippling blow dealt Christopher Reeve. Would they have found his accident as upsetting if he had become famous playing Sherlock Holmes, or even Batman?

The movie's popularity hasn't faded over time. One of Warner Home Video's most requested titles, the company was anxious to prepare the film for DVD. So director Richard Donner and DVD producer Michael Thau set out with a team of dedicated scientists on a quest to create an experience that would make the version people first saw in theaters pale by comparison.

## Super Vision

Our story begins in Hollywood, where the picture side of *Superman* was restored. Normally, Ned Price and his technical-operations team at Warner Bros. would have created a new, color-corrected interpositive print from the negative of the film's final cut to use for the video transfer. But that negative had become torn and scratched, and the optical effects, such as fades and dissolves, had become stained. To restore the film, the team would also need the original *camera* negative.

That negative was sitting in a vault in England, mixed in with all of the other film and sound elements used during shooting and postproduction. It was Thau's job to go through the contents — an incredible 6 tons of stuff — and find everything needed for the restoration.

All of the print damage was fixed digitally — the only digital alterations to the images apart from correcting the color in some of the flying sequences, which had been shot against a large blue screen. But

Reeve's Superman suit was also blue, so it was impossible to create a matte — a process where the blue area of the image is isolated so another image can be substituted for it — without obliterating the costume. To avoid this, the suit for these shots was made more green.

But the technicians never had enough time during the film's frenzied postproduction to correct the color, so about ten shots show Superman flying around in a fairly green outfit. It always bugged director Donner that this is how people have seen the film. But through the marvel of super-digitation, the costume is now indubitably blue, allowing Donner to finally not be. (For Donner's take on the restoration, see "Doing *Superman* Justice" on the facing page.)

When I asked Thau if there were any cables showing that had to be fixed, he replied, "No. There are now a lot of blind old men in England who painstakingly painted those cables out, frame by frame by frame. Their work would be projected big for Dick [Donner], and he'd say, 'Yeah, I can still see the cable.' So they'd go back and do it over, and Dick would look at it again and say, 'It's okay.'"

## Super Sonics

Fixing the soundtrack meant going to the original 70mm master release print, which had the music, dialogue, and sound effects combined in a six-track mix. But the hurried postproduction that had compromised the flying scenes had compromised the sound, too. Tracks were dubbed one on top of another, making the final soundtrack less than ideal. Again, it was up to Thau to

find the best possible materials to use for the restoration.

He happened on an item marked "miscellaneous 1-inch master" while searching through the massive inventory. "When something is that vague," he remarked, "it gets your attention." The box turned out to contain eight reels of 1-inch audio tape marked *Superman* 3M2, 6M1, 4M5, and so on. His jaw dropped: "Just a second. That's how we slate music! Could this really be what I think it is?" It was — the original masters of the John Williams score.

Williams had recorded the hundred-piece orchestra on 24 tracks, which were then mixed down to the six tracks on the 1-inch masters. All of the music was in two sets of left/center/right channels, with each set taken from a different perspective of the orchestra. This gave Thau everything he needed to create a 5.1-channel surround mix.

To avoid having to run the precious masters through the tape machines more than once, music editor Robert Garrett used 24-bit analog-to-digital converters to digitize them directly into his ProTools audio production system. "Once I'd done a little bit of equalization," he explained, "mostly to flatten out that blarey-glarey midrange they had during the '70s, bring up the high end just a bit, and punch up the bass a little, the music cues sounded incredible — absolutely incredible."

## Super Models

To use the remixed music tracks for the DVD, the team needed unmixed versions of the dialogue and sound effects. They had found a tape containing the dialogue,

PHOTOS BY ALDO MAURO

music, and sound effects on separate tracks, but unfortunately none of it was in stereo. This wouldn't be a problem for the dialogue, but, as Thau put it, "mono sound effects just don't fly anymore."

Besides, they sounded horrible by today's standards. A lot of the big explosions, as when Krypton blows up, were just the sound of wood being broken! So Jay Nieremberg and his team at the SoundStorm effects house painstakingly went through the film and replaced most of the original sound effects. On the new soundtrack, Krypton sounds like a big, crystal planet breaking apart — not a wooden one. Where the original effects still worked well, however, they used sampling and other methods to recreate them, but with a lot more dynamic range.

## Super Structure

Sound technicians Steve Pederson and Dan Leahy were given five weeks to do the new mix — three weeks longer than they would usually get, or about the same time as it takes to do the mix for a new film. "Thau directed us to pull the orchestral music back into the theater," said Pederson, "even more than we typically do today with new films. He just wanted to really lean into the surrounds, which I think in a home environment will fill up the room and really immerse the viewers in the sound."

With certain reverb effects and other processing, such as panning dialogue, Pederson decided to be a little more adventurous than the mixers had been in '78. "You can obviously take license with this film. Since there's virtually no reality in a lot of

scenes, you can take whatever is there and bend it."

But they did use the 70mm original as a benchmark to make sure they were maintaining the same proportions of sound effects to music. Scenes that are driven by music in the old mix are still driven by music in the new one. But the music is much louder and cleaner, and the effects are able to cut through it much easier than the old sound effects, which had a lot of hiss. A low-frequency effects (LFE) channel, which didn't exist on the original soundtrack, was added to beef up the bass.

## Super Abundance

The *Superman* DVD has two 5.1-channel soundtracks: the new theatrical mix of dialogue, music, and effects plus a mix with

# DOING SUPERMAN JUSTICE

*Besides Superman, director Richard Donner's films include the Lethal Weapon series, Scrooged, and The Omen. His TV credits are a list of just about every memorable show made in the '50s, '60s, and '70s, including The Rifleman, The Twilight Zone, Get Smart, The Fugitive, The Man from U.N.C.L.E., Gilligan's Island, Kojak, and The Six Million Dollar Man.* — J.K.

### Why reconstruct *Superman* rather than just cleaning and repairing it?

Well, this is 2001. In 2020 I assume there's going to be a whole different look, sound, and approach, and we will view this present period much as we now view the '70s — that it was the Dark Ages. Maybe we'll be able to take an old image and digitally rework it into 3-D. Who knows? But if you're going to rerelease a film, why not bring it up to date and make it as contemporary as is humanly possible?

**Both the original cut and the new one are yours . . .**

Yessssssiree, bub.

### So why the change of heart? Why make the new cut 8 minutes longer?

I was scared stiff when I made that movie. I just wanted to keep cutting down and cutting down, making it as short as I could because I didn't know how it was going to hold. The producers wouldn't allow me to test the film before an audience. They thought Warner Bros. was going to steal the print from them! Ridiculous thing, but that's what they did. Supposedly the only one who had any objectivity was me, and that's stupid because I didn't. Cutting is

usually based on the emotion of the moment or the instinct of the moment. The 8 minutes that went back in are things that I was probably oversensitive to. But *Superman* belongs to everybody.

We had John Williams's music for it all, because everything had been scored apart from two little pieces. We took other sections of John's score that I hadn't used and put them in there, and it seemed to play. Hope to God that he still talks to me after that.

You've got to really go back in time when you're re-editing a film, though. You can't just cut it the way you would today, because that picture was right for its time. We didn't alter the sound mix beyond the original concept. We just made it stronger, better, cleaner. Otherwise, it would be like going back and redrawing the comic books.

**Were you tempted to digitally add to the images the way George Lucas did with the rerelease of *Star Wars*?**

No. This is history for me, this is

a part of my life that was laying back there since 1978, and I'm going to leave it as pure as I possibly can.

### Would you like to make a new *Superman* or other superhero picture using solely computer-generated images (CGI)?

I would love to do *Superman* in 2002. What's open to us now is extraordinary. What we could do today! But it still has to be an emotional film with people and characters, and the schizophrenic life of a man — Clark Kent/Superman.

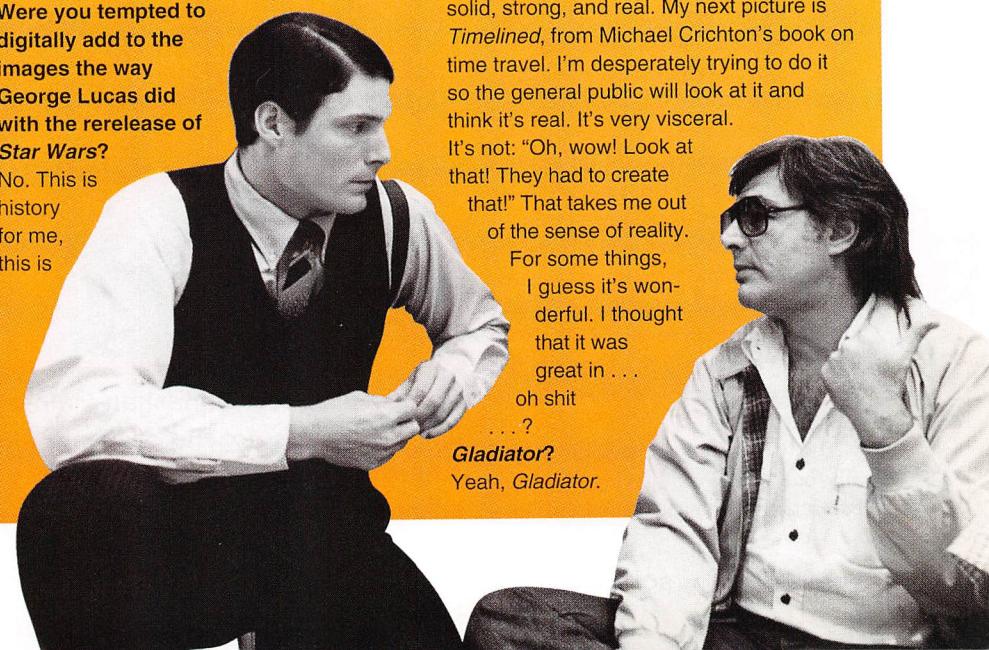
### Do you like CGI-heavy epics like *Gladiator*?

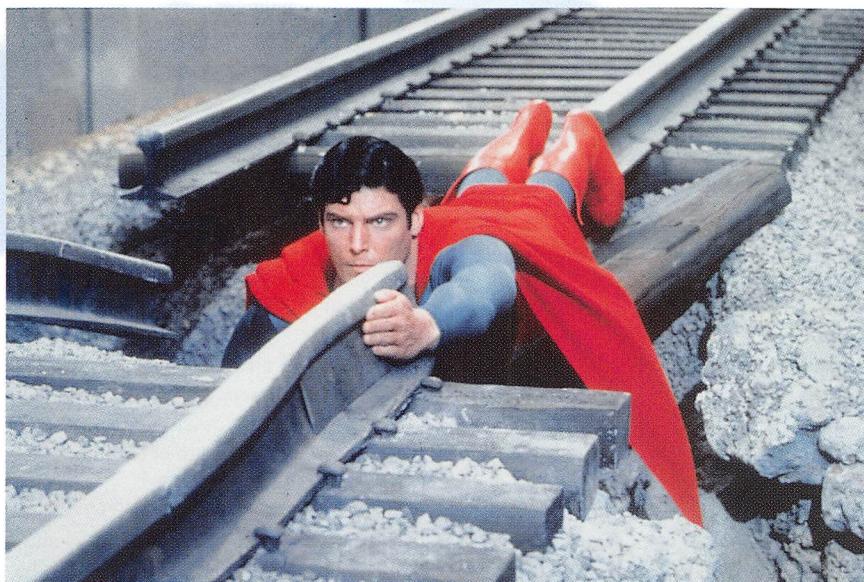
I admire them tremendously. I'm really impressed by what they can do. Myself, I wouldn't go to that extreme in a movie. I'm still a little bit old school, and I'm not much of a prestidigitator. I mean, I don't want to dazzle with footwork if I can give it to you solid, strong, and real. My next picture is *Timelined*, from Michael Crichton's book on time travel. I'm desperately trying to do it so the general public will look at it and think it's real. It's very visceral.

It's not: "Oh, wow! Look at that! They had to create that!" That takes me out of the sense of reality.

For some things, I guess it's wonderful. I thought that it was great in . . . oh shit . . . ?

**Gladiator?**  
Yeah, *Gladiator*.





just the music. There are also unedited versions of eight music cues, remixed for 5.1 channels. A prime example is the main title music. Originally written for the end titles and then heavily edited to be used at the beginning, it's heard here at its original length.

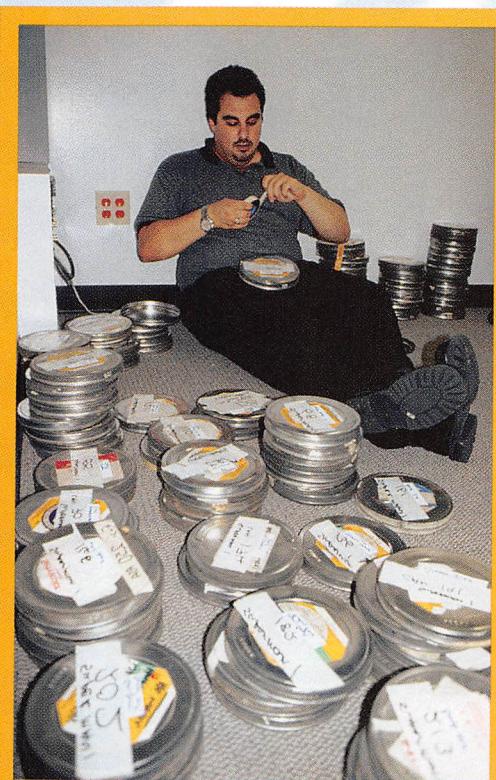
One of the more intriguing extras is the screen tests Thau unearthed while searching through the material. You can see a skinny Chris Reeve acting in a cheesy Superman costume as well as Anne Archer, Stockard Channing, Lesley Ann Warren, Susan Blakely, Debra Raffin, and, of course, Margot Kidder, trying out for the part of Lois Lane.

Thau also discovered a little more than 200 cans of 16mm behind-the-scenes footage shot during the production but never used. Back in '78, Warner Bros. and *Superman*'s producers decided they didn't want to give away all the secrets of how they did the effects, so they put out a meet-the-actors fluff piece instead. There was so much good footage that Thau and DVD co-producer Jonathan Gaines decided to make three half-hour documentaries out of it.

One documentary explores the visual effects, particularly the production team's efforts to make a man fly convincingly. They tried everything — from models on wires to a 2-foot-long remote-controlled Superman to shooting a mannequin into the sky. These and the more successful Oscar-winning, envelope-pushing techniques that were actually used are all shown and explained.

The two other documentaries are really one hour-long making-of featurette cut into two bite-size halves. Host-

ed by Jimmy Olsen (Marc McClure), they include new interviews with members of the crew, composer Williams, and three of the four stars — Reeve, Kidder, and Gene Hackman. The only one missing is the reclusive Marlon Brando. (There's footage from his 1978 interview, though.) Richard Donner and Tom Mankiewicz, the creative consultant who helped Donner develop



**DVD co-producer Jonathan Gaines sorts through dozens of 16mm film canisters containing behind-the-scenes footage.**

*Superman*, appear extensively in the documentaries, and they also pair up to do the film's commentary.

If you want to know how the new cut differs from the original one, the disc has a section that takes you to each of the inserted segments. It also includes a couple of scenes that appeared in the version shown on ABC but didn't make Donner's new cut.

Producers Gaines and Thau have filled the disc with extras, all of them substantial. The screen test and music cues in particular are the kind of marvelous extras that make you appreciate how special a medium DVD really is.

## Super Fly

*Superman* has never looked or sounded this good, according to Thau, not even back in '78 for its theatrical premiere. "*Superman* will blow you away on DVD." And he's right. I went to see the film when I was . . . younger, and I don't remember it being nearly as impressive as on this DVD. Maybe it's improved with age, or maybe watching it with optimized images and sonics made the experience more moving.

From the opening theme, the music sent a chill through me, mostly because it was so enveloping. The soundstage was enormous, but clear and sharp as a Kryptonite crystal. And though all of the complex elements of the musical score were powerfully *there* in every scene, I never missed a word of dialogue. The picture, too, was crisp, clean, and strikingly rich in color — Superman's cape was vividly red and his suit undeniably blue. Even though I was watching a DVD, the images had filmlike smoothness, solidity, and detail.

The highlight was the scene in the elegiacally sad first half where Jor-El's hologram educates his son in the Fortress of Solitude (the restoration has cut a lot of Brando back into the film). As Brando's giant head moves and jumps about the fortress, the sound, too, takes a crazy trip, leaping and flowing from speaker to speaker, the audio acrobatics only adding to this scene's power.

Film is fantasy, and like all religions it only works if you allow it to. Disbelief, like Christopher Reeve, needs to be suspended for any flight to occur. If you want to believe that this Messianic Peter Pan man can fly, this DVD will reward your faith.

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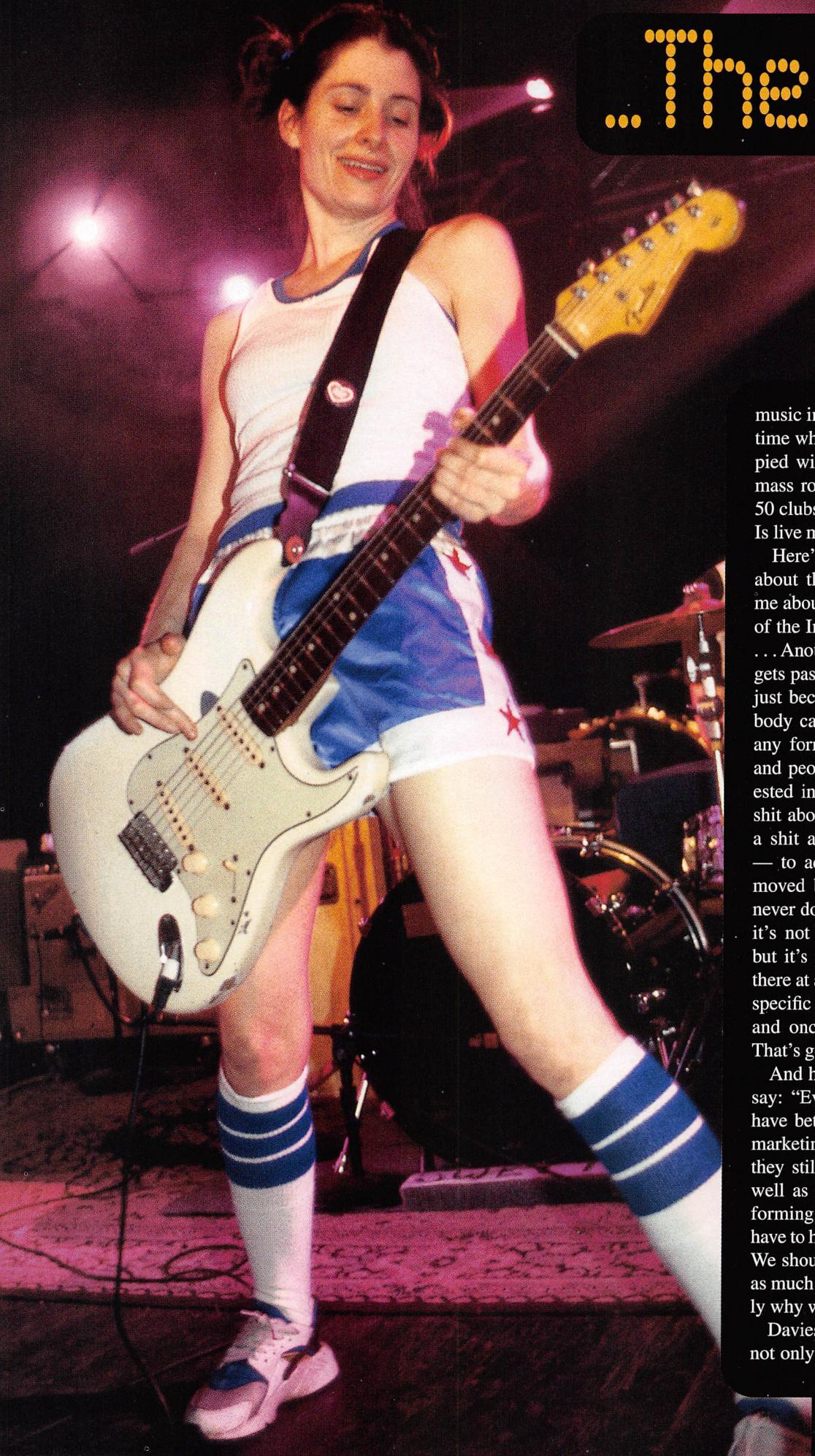
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Marion Sheppard, architect, experiences "Top Gun" through the JBL Cinema ProPack 600 in her Philadelphia loft.



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# ...The Rock...



**I**t seems like yesterday that the South by Southwest Music and Media Conference and Festival began as a local gathering in Austin, Texas. But it's actually been 15 years — and today, what is simply known as SXSW has morphed into the American music industry's largest event. Yet in a time when rock & roll seems preoccupied with all things peer-to-peer, is a mass roundup of nearly 1,000 acts in 50 clubs over five nights still relevant? Is live music itself still relevant?

Here's what David Byrne had to say about that: "The thing that concerns me about P2P is the fact that, like a lot of the Internet, it's totally impersonal. . . . Another thing is, as recorded music gets passed around on the Internet and just becomes data in the air that anybody can have anytime, anywhere, in any form, then it becomes valueless, and people are going to be less interested in it. They're not gonna give a shit about it. What they're gonna give a shit about is the live performance — to actually see something and be moved by it and know that you can never download it. You can film it, but it's not the same. You can record it, but it's not the same. You have to be there at a specific time in your life, at a specific moment, at a specific place — and once it's over, it's over forever. That's gonna be much more valuable."

And here's what Ray Davies had to say: "Even though record companies have better technology today, smarter marketing, and more skillful research, they still don't know the audience as well as I do. That's why I keep performing. And that's why new artists have to have somewhere to perform. . . . We should all just go out and listen to as much music as possible. That's really why we're all here."

Davies practiced what he keynoted, not only seeing young bands but sing-

# Market Is Booming

**There's no downturn in new music at SXSW 2001. On the contrary: *turn it up!***

by Ken Richardson

ing with one, too. The once and future Kink, who will be honored by young artists on a tribute album expected in July from Praxis, will release his first solo album of new material later this year on Capitol. And Byrne, the former Talking Head, has just released *Look into the Eyeball* on his own label, Luaka Bop. You've got to hand it to these veteran musicians for striving to stay fresh and, well, relevant. That's more than you can say for a certain veteran journalist. To wit:

During the panel discussion "Boy Howdy! The *Creem* Story" — all about "quite simply the finest publication rock & roll has ever produced," as moderator Jim DeRogatis put it — someone in the audience asked the eight former *Creem* editors and writers if, given \$40 million by a venture capitalist, they'd do it again. "No," Ben Edmonds volunteered. "Music today doesn't deserve a *Creem* magazine."

*Hissssssssssssss*, went the audience.

"Did you go out last night," went DeRogatis, "or did you sit in your hotel and not see any f--kin' music? I saw three great bands last night. What's the matter with you?"

The matter with Edmonds is what's the matter with Rob Brunner of *Entertainment Weekly* when he writes, "In an unexpected twist . . . SXSW was mostly about the music." Nonsense. SXSW has *always* been about the music, first and foremost. And the newer the music, the better.

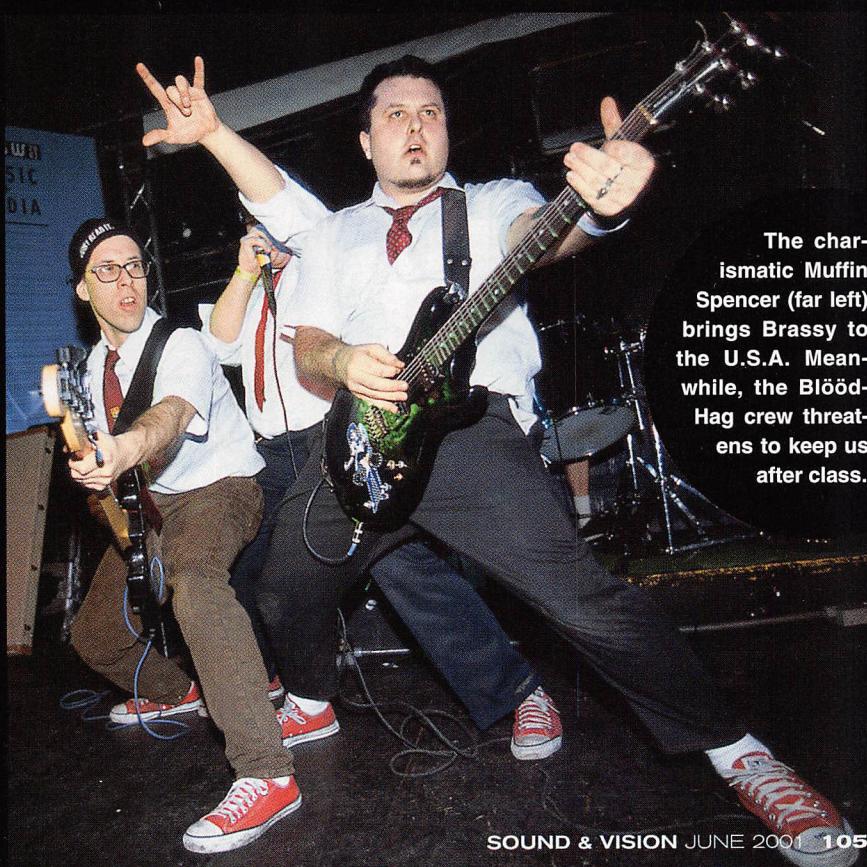
Except for that *Creem* mosh, SXSW 2001 certainly wasn't about the panels. In fact, economic downturns and

P2P uncertainties cast a pall over them. *Creem* panelist and ***Sound & Vision*** music critic Billy Altman said it best when, hearing that \$40 million idea, he said, "Until that question, this is the only panel I've been to in the last two days that didn't mention money."

Still, ***S&V*** readers may be interested to know that Sting's manager, Miles Copeland, had this to say about Napster: "Metallica — three cheers for those guys. They had the balls to actually speak up. When you see people like Courtney Love saying, 'It's okay to steal, these artists are too rich' — the Russians tried taking money from

the rich. Look what happened to *their* society." And Cracker's David Lowery had this to say about multichannel music: "Somebody told me his wife wouldn't even let him put two speakers in the living room — she'll be damned if she's gonna let him put five or six in there." To which producer/engineer Dave McNair added, "I don't think the labels are gonna spend the money to remix the back catalog." To which I could add, "Ever hear of a little 'label' called the *Warner Music Group*?" But that's another story . . .

**T**he story here, as always, is music. So, let's check in with Ray Davies again to see which bands he checked out. How, for example, could he resist the **Deathray Davies** (from Dallas; [deathraydavies.com](http://deathraydavies.com))? "Well, I better not turn up," he said, "because they might take their name literally. . . . But we'll be there." And although I didn't spot him, he must have been in a corner somewhere, digging the band's



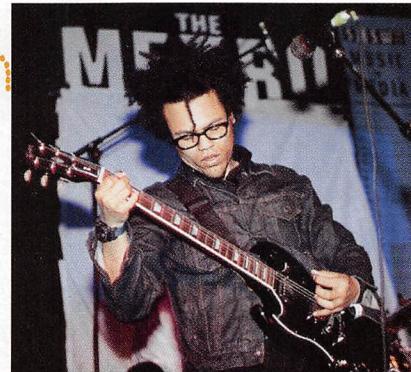
The charismatic Muffin Spencer (far left) brings Brassy to the U.S.A. Meanwhile, the Blööd-Hag crew threatens to keep us after class.

# Rock Market Is... Boom

energetic take on the British Invasion that, back in the last century, his own band helped launch. The Davies' current album is *The Return of the Drunk Ventriloquist* (released by Idol), and live at SXSW, leader John Dufilho and his mates bashed and popped like pumped-up Attractions.

I did spot Ray at the gig by **Swag** (Nashville; [swagweb.com](http://swagweb.com)), and no wonder: here again was a brilliant homage to '60s Brits. But instead of a band of unknowns, here were Ken Coomer of Wilco, Robert Reynolds of the Mavericks, Jerry Dale McFadden of Sixpence None the Richer, and solo artist Doug Powell (with Warren Pash substituting for Cheap Trick's Tom Petersson). Together, they sounded nice and full, with even the close harmonies and acoustic ballads of *Catch-all* (Yep Roc) coming across vividly in the packed Continental Club.

From their name, the **New Pornographers** (Vancouver; [mintrecs.com](http://mintrecs.com)) could be mistaken for a speed-metal band. They're actually named after a Jimmy Swaggart book (*Music: The New Pornography*), and they take after the same Top 40 forebears cited by the Deathray Davies and Swag. Their album, *Mass Romantic* (Mint), is so giddy that Ray was compelled to climb on-



# Market Is... Booming

The so-called **Incredible Moses Leroy** (left); the so cool **Deathray Davies** (right)

My fave discovery, however, was **Brassy** (Manchester, England; [brassy.com](http://brassy.com)). Watching singer/guitarist Muffin Spencer (Jon's sister) cheerlead the band left me imagining that Lene Lovich had been reborn as a hip-hop rocker, or that Chrissie Hynde had gotten happy feet. And hearing the band rally behind her — think MC-52's — left me remembering what David Byrne said about performing, because no matter how good the studio Brassy is on *Got It Made* (Wiiija/The Beggars Group), the live Brassy is sharper, tighter, and ultimately more *alive*. In addition to its gig, the band opened the trendy closing-night party thrown by *Spin* magazine, which should tell you something. I'll tell you this: when Brassy comes to a club near you, go, and take your air guitar as well as your dancing shoes.

Switch to **Sexy Finger Champs** (Austin; [sexyfingerchamps.com](http://sexyfingerchamps.com)), and you must "think Harlem Globetrotters meet *Sailor Moon*," according to their SXSW blurb. Toons, indeed: singer Kerri Beets not only aced the theme of *Pokémon Jigglypuff* but also dared an audience member to stick his

## Rockin'... All... Over... the... World

Local bands — read: Austin or Texas or the Southwest in general — get plenty of attention at SXSW, and rightly so. But international acts can get lost in the shuffle. So, although I've mentioned some Canadian and British bands in these pages, I should go farther afield. Some foreign entities are decidedly neat-o, others merely **Mono** (Tokyo; [canal.ne.jp/~sound/mono](http://canal.ne.jp/~sound/mono)). "As their destructive, violent feedback guitars overwhelm you," says their blurb, "you encounter unexpected beauty." Don't know

whose eye was beholding that "beauty," but all I saw and heard from Mono was, um, monolithic. Memo to Japan: please remember that high volume doesn't always mean high art.

I'd rather hear California surf-style music with Italian spaghetti-western strains as played by Scandinavians in front of a Venetian mural in a Texas bar — which is precisely what I heard from **Laika & the Cosmonauts** (Helsinki; [sjoki.uta.fi/~latvis/yhtyeet](http://sjoki.uta.fi/~latvis/yhtyeet)). Longtime favorites of this magazine and its predecessor, these guys have followed up the likes of *The Amazing Colossal Band* and *Absurdistan* with the live *Laika Sex Machine* (Yep Roc), whose 26 tracks in 76 minutes will overwhelm you with crackerjack guitars and lickety-split playing. The Cosmonauts left their audience delirious. Surfs, you right!

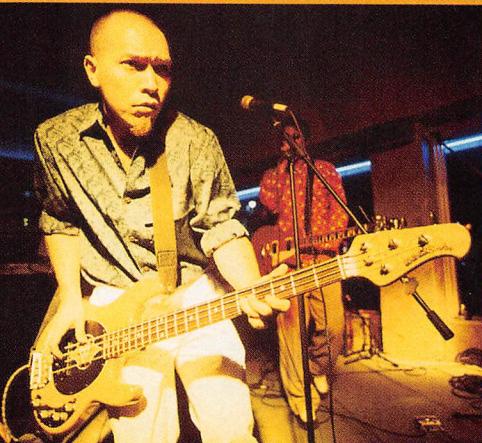
Also worked into a frenzy were the lucky few who saw **Rabanes** (Panama



**Mir-aculous Cosmonauts (above); Rabanes (below)**

City, Panama; [rabanes.com](http://rabanes.com)). MTV Latino has called them "salsa grunge," but on their self-titled CD (*Crescent Moon/Sony Latin*) they also tap ska, calypso, rap, and reggae — an infectious blend that kicks Ricky Martin in the *cojones*. And though they seemed like a motley, temperamental crew at SXSW, they were in complete command of the Latinas at their feet. Your humble gringo reporter got few of the words but definitely got it.

— K.R.



hand in a bag and taste the contents, which turned out to be the Powerpuff Girls cereal (or, as she insisted, "It's just Rice Krispies with Pop Rocks!"). There were tunes, too, not only sounding like the power-pop-and-punk girls and guys the Champs are but also heading South of the Border and into the Caribbean. All this and more is on their self-released *Trash Hits the Rock*. Talk that trash: "In his uniform, so red / Not a single hair on his head / I want to f-k Jean-Luc Picard!"

Meanwhile, "I wanna destroy you," sang Robyn Hitchcock as he reunited with Kimberley Rew and the other **Soft Boys** (London; matadorrecords.com). I usually stay away from such marquee events at SXSW, but this one was too good to resist — especially in light of the wonderful reissue of *Underwater Moonlight* (Matador). And it was gratifying to see a plugged-in Hitchcock bouncing off a live-wire Rew. Unfortunately, the quaintly named Austin Music Hall is more like an airplane hangar, and the boomy sound was hardly in keeping with the Boys' old New Wave aesthetic.

Then again, the **Cash Brothers** (Toronto; cashbrothers.com) didn't reap sonic dividends from the shoebox that is Momo's, where the alt.country.rock of their debut, *How Was Tomorrow* (Zoë/Rounder), lost some of its muscle. They also had trouble keeping guitars in tune, admitting: "Texas weather does weird things to strings."

The transition from studio to stage can do other things, too. **Rhythm of Black Lines** (Austin; rhythmofblacklines.com) can make art out of repetition, but in a lonely club at one in the morning, its jams sometimes sounded jammed. Still, if you crave the mod-progressive tilt of King Crimson's *Discipline*, track down *Set a Summery Table* (Sixgunlover). **The Incredible Moses Leroy** (San Diego; mosesleroy.com), a.k.a. Ron Fountenberry, is a pop collagist with a big playlist on *Electric Pocket Radio* (Ultimatum), but at SXSW he led a band that steamrolled his songs' finer points. And whereas **Call and Response** (San Francisco; silicon.com/~analogdj) seems agreeably pomo on its self-titled debut (Kindercore), its sweet and sunny music struck me as impossibly pre-mo at Emo's.

Of course, the variety of "venues" is also one of the great things about SXSW. You could walk the trade-show floor and find singer/songwriter **Sarah Harmer** (Kingston, Ontario; sarahharmer.com) in Yahoo!'s booth, performing highlights from her accomplished *You Were Here* (Zoë/Rounder). You could also stroll down-



town until you reached one of SXSW's best unofficial sites, the buskers' corner of Sixth Street and San Jacinto, where **Braxton Hicks** (Dover, Delaware; braxtonhicks.com) was in residence one night. Actually, it was nearly two in the morning, yet the six musicians — including one using his drumsticks on the nearest streetlight pole — gave it their all. They also gave me a copy of a four-track demo whose acoustic/electric material has great potential.

You could also wander all over town and run into entire alternatives to SXSW. At SXSA (South by South Austin), I caught **Red Meat** (San Francisco; redmeat.net) — no, not speed metal, but "raw, Bakersfield-style honky tonk." The sextet plays nearly all original material, it sounds original, and on the fine *Alameda County Line* (Ranchero), it's produced by the reliable Dave Alvin.

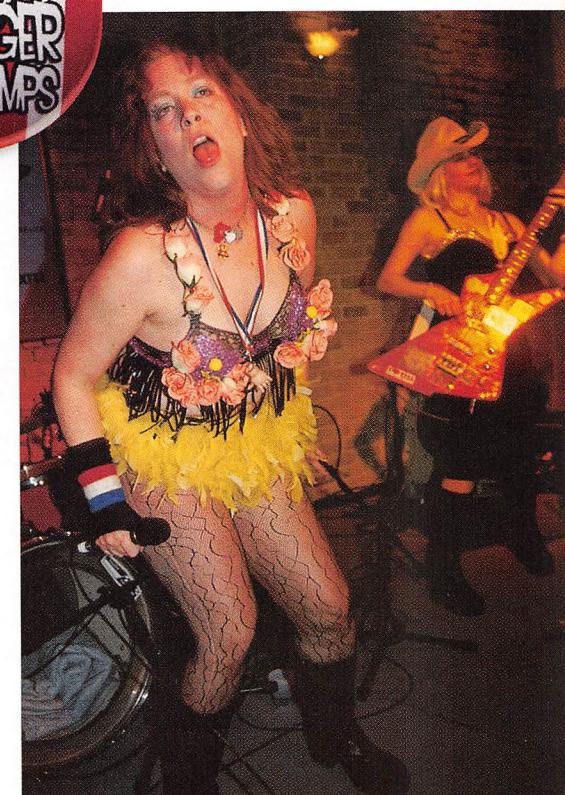
Finally, you could hear acts that, as far as I know, didn't even play. Instead, they dropped off their homemade CDs on tables in the Austin Convention Center, hoping to be heard. In all honesty, some deserved to stay on those tables, including **The Artist Formerly Known as Vince** — keep practicing, buddy. But then there was a band that doesn't even exist: the **Poppin' Wheelies** (thepoppinwheelies.com), whose self-titled album (Uranus Laboratories) is actually the brainchild of Robin Wilson, formerly of the Gin Blossoms, currently with the Gas Giants (and based in Arizona). Wilson says the disc is "the soundtrack to a proposed animated series about a band in outer space," combining "rock & roll, sci-fi/fantasy, comic books, animation — everything I love." And it's a gem, complete with three songs written by Tommy Keene, himself a hidden pop treasure.

Records like *The Poppin' Wheelies* may

not save the universe, but they can help keep music in the music industry. This is especially crucial in a time when the following Dennis Miller rant can be read as the gospel truth: "The music industry has nothing to do with music. What you hear on the radio today is one-half marketing, one-half public relations, and two-thirds timing. And if that math makes sense to you, you probably work in the Royalties Department at one of the major labels."

In Austin, something was proven all night for each of five nights: SXSW is one-half music you know, one-half music you think you know, and two-thirds The Great Unknown that helps you fall in love with music all over again. Do the math, and keep the faith.

S&V



# Multimedia Maven

The newest equipment, software, and Web sites

EDITED BY MICHAEL ANTONOFF



eo, S-video, and stereo audio inputs at one end and a USB cable (not shown) at the other end. The device comes with Dazzle MGI Videowave 4 editing and special-effects software. Simply plug in output cables from a camcorder or VCR, then connect the Digital Video Creator to a USB port on a 300-MHz or faster Pentium II PC running Windows 98 or Millenium Edition.

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**Dazzle Multimedia** 510-360-2300, [www.dazzle.com](http://www.dazzle.com)

## stand and shoot

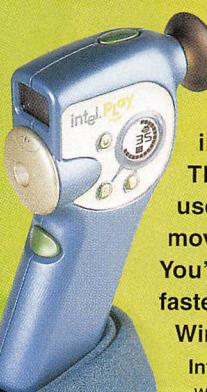
**V**ideo cameras for PCs are usually tethered to the computer.

Recognizing that most kids don't like to sit still for too long, Intel plans to introduce a wireless pistol-grip PC camera this fall that'll let them shoot up to 4 minutes of video (320 x 240-pixel resolution) and audio away from the computer. The Play Digital Movie Creator (\$99), unveiled at the American International Toy Fair, doesn't accept removable memory, so your budding Spielberg will still have to dock it to a PC when it fills up. The cradle/stand shown has a

USB connection, and editing software is included.

The camera can also be used to create time-lapse movies or take snapshots. You'll need a 266-MHz or faster Pentium PC running Windows 98 or higher.

**Intel** 503-696-8080, [www.intel.com](http://www.intel.com)



## digital afterlife

**S**ay you want to share your Little Leaguer's grand slam via e-mail, but you captured the feat with an analog camcorder. Until recently, you would've had to open up your computer and install a video-capture board to do an analog-to-digital conversion. Now, Dazzle Multimedia has simplified things with its Digital Video Creator 80 (\$70), a mouse-size peripheral that has composite-vid-

eo, S-video, and stereo audio inputs at one end and a USB cable (not shown) at the other end. The device comes with Dazzle MGI Videowave 4 editing and special-effects software. Simply plug in output cables from a camcorder or VCR, then connect the Digital Video Creator to a USB port on a 300-MHz or faster Pentium II PC running Windows 98 or Millenium Edition.

Once you're satisfied with your video, you can post it to a Web site, e-mail it to grandparents, or save it to a CD-R.

**Dazzle Multimedia** 510-360-2300, [www.dazzle.com](http://www.dazzle.com)

## private show

**M**ultitasking is all the rage, but who has enough pockets free to carry both a music player and an electronic photo viewer? Grab Samsung's Photo Yepp instead: it's an MP3 player and a digital-photo album with a 2 1/2-inch color LCD. While it offers the same playback capabilities as a digital still camera, there's no lens, so the only way to get images into the Photo Yepp

is by downloading them from a computer — the same way you'd transfer the music. Regrettably, unlike some cameras, it doesn't allow connection to a TV for showing pictures to a group. Priced at \$399, including a docking station as shown, the Photo Yepp comes with

64 MB of internal memory

and a slot for a SmartMedia card. The 3 1/2 x 2 1/2 x 1/2-inch player weighs 5 1/2 ounces with its rechargeable lithium-ion battery. **Samsung** 800-726-7864, [www.samsungusa.com](http://www.samsungusa.com)



## smarter media

**E**asily the dumbest type of flash media (newer formats like CompactFlash

have onboard controllers), the misnamed

SmartMedia card has lodged itself squarely in the slots of many digital cameras and digital music players. But the format's memory capacity has hardly kept up with the demands for higher-resolution photographs and ever more music. Though a few companies have announced SmartMedia cards with 128 MB of memory (CompactFlash

cards are available with up to 512 MB), SanDisk is expected to be the first to start selling them this spring. The 128-MB cards (\$189 each) fit in the same slots used by the earliest Nomad and Rio MP3 players, which typically held 32-MB cards, and should work in any digital music player that accepts SmartMedia, according to SanDisk. But if you have a camera more than two years old, check compatibility with the manufacturer. **SanDisk** 408-542-0500, [www.sandisk.com](http://www.sandisk.com)



## lyra: take 2

Second-generation products are usually better, and RCA's Lyra2 digital music player (\$299) is no exception. It adds an FM tuner with 15 station presets and streamlines the transfer process by using a fast USB-attached CompactFlash card reader/writer instead of one with parallel- and keyboard-port connections. I was able to copy two songs totaling 9 MB in only 25 seconds.

Another welcome addition is a remote control built into a headphone extension cord so you can keep the player in a pocket. If you prefer to work the intuitive controls on the player itself — without the remote's 3 feet of tangle-prone wire — you can plug the stylish back-of-the-neck headphones directly into the Lyra2. The large LCD screen is enhanced by switchable backlighting.

My main gripe is that when switching from FM you have to wait 15 seconds before the Lyra2 begins playing digital audio (MP3, WMA, or RealAudio). I also wish AM was included. There's no internal memory, but it comes with a 64-MB card, a car adapter, MusicMatch Jukebox 5.1 and RealPlayer G2 Jukebox software, and two AA batteries. It's compatible with Windows 98 SE or higher and USB-enabled Macs.

RCA 800-336-1900, [www.rca.com](http://www.rca.com)

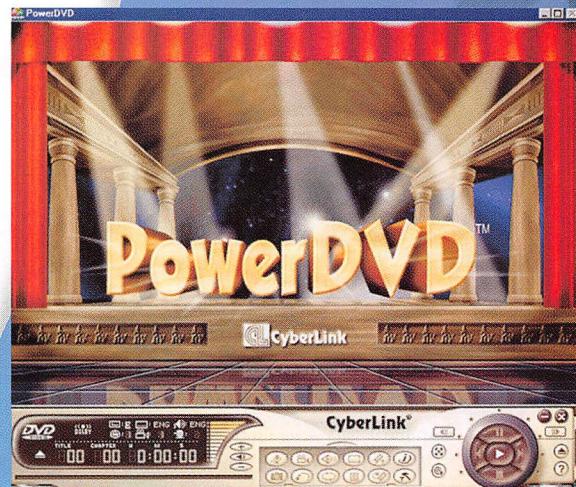
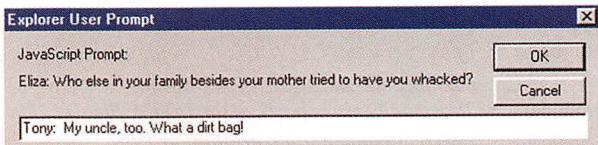
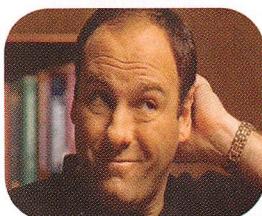


## hit me?

Dusted off from the primordial days of personal computing, the software "therapist" known as Eliza has returned as a Web site. Though intended as a parody of real psychotherapy, Eliza does at least get people talking about their problems. And conversing with a machine, they may be more open than with a human being — which brings us

to HBO's secretive but angst-ridden Tony Soprano. By switching from Dr. Melfi to the free Eliza, he'd not only get online help without leaving his strip club, but he'd be able to divert loads of cash from counseling fees to Meadow's college tuition.

**Dr. Eliza** [www.pandi.20m.com/games/elizav2.html](http://www.pandi.20m.com/games/elizav2.html)



## dvd-rom theater

Stocking DVD movies in a computer store might seem as odd as offering copies of Norton Utilities for sale at Hollywood Video. It makes more sense when you realize that many new computers come equipped with DVD-ROM drives even though there still isn't that much DVD-ROM software for them — just thousands of DVD movies. So the real question is: do you feel comfortable watching movies on a small screen a couple of feet away?

If you're not sure, you can always use the stripped-down DVD player software bundled with the drive. But if you're serious, you should consider buying a DVD utility program that matches or even surpasses the features found in a stand-alone DVD player. Two of the best we've tried are Cyberlink's PowerDVD 3.0 and InterVideo's WinDVD 2000 2.3, both for PCs running Windows 95 or higher. Both open with screens simulating the front-panel controls of a physical DVD player, and each expands to reveal additional controls.

Beyond normal play functions, PowerDVD (\$49.50) has a 4x or 9x digital zoom, an A-B repeat mode, and dual subtitles for learning a language. WinDVD has an A-B repeat and a multilevel zoom, too, but you hold down the left mouse button and draw a dotted rectangle to enlarge any portion of the picture. A version of WinDVD with two-channel audio is \$30, while one that supports up to six channels costs \$50.

Both programs excel at capturing still-frame images. While playing or pausing the movie, you simply press P on the keyboard with WinDVD or click on the Capture icon with PowerDVD. The selected images are automatically saved in a subdirectory as consecutively numbered BMP files. PowerDVD gives you the option of placing an image in the Windows clipboard or turning it into your desktop wallpaper in one step. So if you're a Michelle Yeoh fan, you can keep her permanently astride James Bond's motorcycle as background for your computer's application icons.

Cyberlink 510-668-0118, [www.gocyberlink.com](http://www.gocyberlink.com)  
InterVideo 510-651-0888, [intervideo.com](http://intervideo.com)



# MP3 Hits the Dash

**W**hen I last discussed MP3 in this space ("MP3 to Go," September 2000), I noted that car stereo enthusiasts were getting tired of using dummy-cassette adapters to play their MP3-encoded tunes on the road. Instead of waiting for in-dash MP3 players to arrive, some had gone ahead and rigged up makeshift hard drives.

If only they'd been a little more patient. A couple of months later MP3-capable CD gear — most able to play MP3 songs burned onto CD-R discs — arrived with great fanfare from Aiwa, Britain's empeg, Kenwood, and Rockford Fosgate, and enthusiasts snapped up the new head units faster than Napster users downloaded Metallica's cover of "Oops!... I Did It Again" before . . .

**"MP3 is the best thing that's happened in my car," said one enthusiast when I asked online about mobile MP3.**



Panasonic, Rio, Sony, and Visteon. Seeing MiniDisc champion Sony in this list may arch some eyebrows, but it all makes sense according to Phil Lubell, senior marketing manager for Sony's mobile division, who feels that the MP3 and MiniDisc formats can coexist.

"A single-disc CD/MP3 player is like having ten CDs in the dash," Lubell told

me. "Simply put, the ease of ripping your own custom CD-Rs from your computer and storing ten times the amount of music on them is very attractive. And the sound quality [usually 128 kilobits per second, or kbps] should meet the expectations of a first-time car stereo customer."

Since most of the MP3 heads announced



for 2001 have yet to hit stores, I thought it would be interesting to find out what kind of experiences owners of first-generation MP3 gear have had. So I went to the site SoundDomain.com and posted a few questions about mobile MP3.

Jason Plastow of Chicago, who has used the Aiwa CDC-MP3 head in a 1999 Ford E450 van, was enthusiastic. "Eliminating the need to continuously change CDs makes driving a safer endeavor." (Good point.) "Plus," he continued, "the advent of individual folders to keep track of the 100-plus songs you can fit on a single CD-R makes it that much easier to navigate and find your favorite song or artist."

And David Doran of Claremont, California, who drives a 1992 Honda Accord LX that sports the same Aiwa head, wrote, "MP3 is the best thing that's happened in my car. I was never satisfied with having to listen to the same CD over and over, but now I can listen to one CD-R" without getting bored. "And if Aiwa ever makes an

MP3 changer," he added, "I'd probably get that, too."

Asked how good his MP3-encoded music sounds on the road, Plastow said that "in the mobile environment, there is no noticeable difference in the quality of sound [between CDs and MP3s]. Even on my fairly good home stereo, high-bit-rate recordings (256 kbps and above) of diffi-

**I want my MP3: Meet the new generation of in-car MP3 heads, which include Rockford Fosgate's RFX-9300 (top, \$500) and Sony's CDX-MP450X (\$400).**

cult material, like Tori Amos's blaring piano, do not have any noticeable sound degradation." But "one thing my MP3 unit would benefit from," he adds, is a memo-

ry buffer to keep the music playing if he hits a bump in the road.

A post from "Collide" concerned his experience with one of Kenwood's second-generation MP3 heads, the KDC-MP8017 (\$360). "I love having 150-plus songs on one CD, and the scrolling-text display showing the artist and track names is also really cool," he wrote.

My take on mobile MP3? Well, I listen mostly to 196-kbps recordings in my Explorer, and I'm willing to live with a few dozen songs on a CD-R instead of 100 in order to maintain that standard. If you're an MP3 junkie, leave those jury-rigged hard drives at home — I say it's okay to rip and rock with the new generation of mobile MP3 heads.

**Mike Mettler, editor in chief of Car Stereo Review's Mobile Entertainment, is still searching the Web for a download of the version of AC/DC's "You Shook Me All Night Long" he sang at the magazine's 10th Anniversary party at the IASCA Finals in Greenville, South Carolina, in 1997.**

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# movies

entertainment



## CHARLIE'S ANGELS

Columbia TriStar

Movie **★★★**

DVD **★★★★**

**T**wenty years from now, it is unlikely that *Charlie's Angels* will be the subject of a learned article in *Film Comment*, screened as part of a retrospective at the Cinémaqué Française, or confused with *The Magnificent Ambersons*. The big-budget film version of the indisputably cheesy 1970s TV show is, however, a very funny action spectacle, faithful to the ludicrous heart of the series but tongue-in-cheek enough that it doesn't really insult your intelligence. And it has enough *Matrix*-ian combat scenes, featuring babes in cool costumes kicking butt, to more than satisfy any aficionado of the babes-kicking-butt genre.

The titular Angels are Drew Barrymore, Cameron Diaz, and Lucy Liu, and, meaning no disrespect to the original TV cast, these 21st-century celestials are mega-better on every level — although, as there's no analog to Kate Jackson, it's unclear who's the smart one. John Forsythe reprises his TV role as Charlie, the mysterious, unseen millionaire who gives the Angels their marching orders, and Bill Murray replaces the late David

Doyle as second-in-command Bosley. As you might expect, Murray does his usual skillful job of convincing us that he singlehandedly invented contemporary irony. There's a plot, somewhere — something about a kidnapped computer geek and some stolen software — but you won't really notice. Not when first-time feature director Joseph McGinty Nichol (charmingly billed as McG) keeps things blowing up on a regular basis and when Hong Kong action choreographer Cheung-Yan Yuen (brother of the guy who did *The Matrix*) keeps the oft leather-clad girls in the air as much as possible.

The DVD itself is impeccable. The 2.35:1 widescreen transfer renders McG's deliberately retro, candy-colored design schemes with psychedelic vividness. Say what you will about his practice of the cinematic art

— the look of the film is almost tactile, and the DVD gets it exactly right. The sound is equally impressive, with tremendous clarity even when Edward Shearmur's score and the various bombs and explosions might be expected to cancel each other out. Extras are numerous to the point of overkill; this is the remake of a jiggle TV show, after all. Along with six making-of featurettes, two music videos, trailers, production notes, and deleted and extended scenes, you get generally interesting commentaries by cinematographer Russell Carpenter and McG himself. English, Dolby Digital 5.1 and Dolby Surround; French, Dolby Surround; letterboxed (2.35:1) and anamorphic widescreen; dual layer.

Steve Simels

## BEN-HUR

Warner

Movie **★★★★** DVD **★★★★**

**T**his lavish entertainment, created by director William Wyler, a mix of screenwriters (including the uncredited Gore Vidal, Maxwell Anderson, and Christopher Fry), and a great crew, is a prime example of Hollywood at its collective best. Art direction, set design, and cinematography are superb, and maestro Miklós Rózsa's score is one of cinema's all-time greatest. Thankfully, all of this is evident in the DVD transfer. The clarity of the picture is quite astound-

## STAR SYSTEM

**Stellar** **★★★★★**

**Excellent** **★★★★**

**Good** **★★★**

**Fair** **★★**

**Poor** **★**

Movie refers to the original film.

DVD refers to the film's presentation on disc, including picture and sound quality as well as extras.



Gunning the engine: Charlton Heston controls the beasts but not his ego in *Ben-Hur*

ing, with generally excellent color. The new Dolby Digital 5.1 mix from the 1959 six-track original is also impressive, especially in its fully enveloping renditions of thundering hooves, creaking galleys, and howling winds.

Accompanying the feature on this dual-layer, doubled-sided DVD-18 disc is a splendid 1993 documentary containing interviews, rare behind-the-scenes footage, and clips from the 1907 and 1924 film versions. This easily overshadows Charlton Heston's commentary, which is often repetitive and rarely manages to rise above his monumental pomposity. A final bonus is a selection of faded screen tests, with Leslie Nielsen's Messala almost topping *Naked Gun* as the zenith of his comedy career. **English, Dolby Digital 5.1; French, Dolby Surround; letterboxed (2.75:1) and anamorphic widescreen; two dual-layer sides.**

Mel Neuhaus

## THE CONTENDER

DreamWorks

Movie **★★★** DVD **★★★★**

**R**od Lurie's directorial debut, a topical political thriller about character assassination, beautifully showcases outstanding acting from a topnotch cast while paying homage to the past works of John Frankenheimer and Frank Capra. A little homage is understandable, given Lurie's former career as a critic, but as these two masters had very different approaches to depicting American politics, their influences mix like oil and water. The film, therefore, ends up as a rather artificial compromise between the two. While aspiring to *Mr. Smith Goes to Washington*, he comes dangerously close to encroaching on

Steven Spielberg territory. Nonetheless, the subject matter is generally gripping.

The film actually looks better in this DVD transfer than it did in the theaters, with sharp images offering a virtual spectrum of dark and warm mahogany colors. This is supported by a strong, clean soundtrack that allows audiences to savor each verbal vivisection (and in either Dolby Digital or DTS 5.1). The accompanying documentary is generously peppered with film clips and interviews. Other extras include ten deleted scenes and an entertaining commentary by Lurie and the wonderful Joan Allen. **English, Dolby Digital 5.1, DTS 5.1, and Dolby Surround; letterboxed (1.85:1) and anamorphic widescreen; dual layer.**

Mel Neuhaus

## WONDER BOYS

Paramount

Movie **★★★** DVD **★★★★**

**P**erfectly set up by Bob Dylan's typically rheumy, Oscar-winning song "Things Have Changed," *Wonder Boys* is a darkly funny yet ultimately tender story about the writing life. As Grady Tripp, a dope-smoking college professor who published a critically ac-

claimed and commercially successful novel seven years ago and has been living in its shadow ever since, Michael Douglas turns in a performance that oozes authenticity and vulnerability. There are some unnecessary clichés (manuscript pages scattered by the wind, the boorishly clueless English Department head), but the movie generally rings so true it easily overcomes them. And the beautiful soundtrack includes some of the best singer-songwriters of the last 20 years, with Dylan joined by Neil Young, Van Morrison, John Lennon, and Leonard Cohen.

The anamorphic DVD transfer looks spiffy, rendering the tweedy halls of academia, the Pittsburgh snow, and Douglas's weathered face with aplomb. A nice extras package includes the Dylan music video, a featurette, and cast and crew interviews. Director Curtis Hanson (*L.A. Confidential*) also provides a detailed dissection of the soundtrack and a tour of the Pittsburgh locations. All in all, *Wonder Boys* is as satisfying as a good book on a winter day. **English, Dolby Digital 5.0; French, Dolby Surround; letterboxed (2.35:1) and anamorphic widescreen; dual layer.**

Marc Horowitz

## REMEMBER THE TITANS

Disney

Movie **★★★** DVD **★★★★**

**A**lexandria, Virginia, was a racial powder keg in 1971. To try to relieve some tension, Herman Boone, an African American, was hired as head football coach for T. C. Williams High School. Bill Yoast, the white man who had expected to fill the position, became his assistant in coaching a mixed-race team. The rest, as they say, is history. This feel-good movie, although overly manipulative at times, tells the story well, with Denzel Washington convincing as Boone and Will Patton exceptional as Yoast.

The DVD scores big. The picture transfer is of the highest standard, and the sound is demonstration-caliber. When player blocks player in the exciting game scenes, the sound effects (especially in DTS) really help place you inside the action. The extras are exemplary, too, including two commentaries, one

Stareway: Tobey Maguire, Michael Douglas, and Katie Holmes in *Wonder Boys*



# Quick Fixes

## A PASSAGE TO INDIA

Columbia TriStar

Movie ★★★ DVD ★★★★

The final work from David Lean may provide a less-than-grand viewing experience, but don't blame the director. His 1984 adaptation of E.M. Forster's novel is faithful (maybe too faithful), so the central events remain ambiguous to the last. Still, Lean's typically lush images provide a pleasant diversion, and there are outstanding performances by Alec Guinness, Judy Davis, and others. The DVD transfer captures the thrilling vistas and crowd-filled scenes for which Lean will always be remembered; a 5.1-channel mix would have suited this. An eight-minute interview with Lean is included. **English and French, Dolby Surround; Spanish, Dolby Digital two-channel mono; letterboxed (1.85:1) and anamorphic widescreen; dual layer.**

Ken Korman



Recreational physical therapy: *Alfie*

## ALFIE

Paramount

Movie ★★★ DVD ★★★

Michael Caine's 1966 portrayal of a Cockney Don Juan has lost none of its charm, and the film itself is an interesting Swinging London time capsule. Unfortunately, its once vaunted sexual frankness now seems quaint, and Caine's running monologue to the audience might be too stagey for contemporary tastes. The DVD transfer is fine, although the print itself looks a bit worn, and the reprocessed Dolby Digital 5.1 soundtrack is very effective. The original mono is included for those who prefer it. **English, Dolby Digital 5.1 and two-channel mono; letterboxed (2.35:1) and anamorphic widescreen; single layer.**

Steve Simels

## TIE ME UP! TIE ME DOWN!

Anchor Bay

Movie ★★★ DVD ★★★★

A young man with a screw loose (Antonio Banderas) takes a B-movie actress (Victoria Abril) prisoner in her own home, certain that she'll love him once she gets to know him. This being a Pedro Almodóvar film, she does. While Almodóvar's vibrant colors and love of demented characters are always evident, the wild invention of his 1980s films had begun to flag by 1990. Accordingly, *Tie Me Up!* isn't particularly offensive and doesn't have much of a kick. The transfer is first-rate, though. **Spanish, Dolby Digital two-channel mono; letterboxed (1.85:1) and anamorphic widescreen; single layer.**

Sol Louis Siegel

## THINGS TO COME

Image/Corinth

Movie ★★★ DVD ★★★

This landmark 1936 science-fiction film, with a script by H. G. Wells himself, tells the story of a world destroyed by war, then resurrected by a totalitarian government. It seems dated now, but it's still entertaining, with magnificent music by Sir Arthur Bliss. The print is damaged, but the transfer is clean. If you click on the almost hidden symbol at the upper left of the menu screen, you'll be treated to some campy trailers. **English, Dolby Digital mono; full frame (1.33:1); single layer.**

Rad Bennett

## DANCER IN THE DARK

New Line

Movie ★★★ DVD ★★★★

To tell his tragic tale of a factory worker's desperate attempt to raise enough money for an operation that will save her son's eyesight, writer/director Lars von Trier shot his film on digital video using two distinct styles. One involves shaky, handheld camerawork and muted images to capture the dreariness of day-to-day life. The other amounts to an explosion of color and song as the heroine's fantasy world is brought to life through elaborate choreography and Von Trier's "100 cameras" technique, which takes a week to set up and mixes images from every conceivable angle. Holding all this together is indie-rock star Björk in the lead role. She also provided the angular, soaring music (nominated for an Oscar), which allows the film to advance beyond mere experimentation.

The DVD transfer dutifully exhibits the strengths and limitations of digital cinematography. The look may be a little cold, but the potential for new visual language is almost unlimited. Both the Dolby Digital 5.1 and DTS mixes serve the music well, although some may find the surround-channel action a little timid. The extras, including two commentaries, documentary footage, and deleted scenes, help illuminate the method behind Von Trier's "madness." **English, Dolby Digital 5.1, DTS 5.1, and Dolby Surround; letterboxed (2.35:1) and anamorphic widescreen; dual layer.**

Ken Korman

## ALMOST FAMOUS

DreamWorks

Movie ★★★ DVD ★★★★

In the most purely autobiographical movie in years, Cameron Crowe recreates his experiences writing stories for Rolling Stone magazine in the '70s at the tender age of 15. Newcomer Patrick Fugit plays the overachieving scribe William Miller, who goes on the road with the fictional band Stillwater. He falls for "band-aid" Penny Lane (Kate Hudson in a charming, Oscar-nominated performance), but she has already lost her heart to Stillwater's lead guitarist (Billy Crudup). What is meant as a gentle coming-of-age story and a tribute to the power of music sometimes gets knotted

in these soapy entanglements. But *Almost Famous* is full of small, truthful moments — such as Philip Seymour Hoffman's brief but brilliant turn as legendary rock critic Lester Bangs — that raise it far above standard fare.

The transfer is wonderfully sharp and richly textured, and both the Dolby Digital and DTS 5.1 mixes give all the '70s rock on the soundtrack a new lease on life. The best of several extras is the complete text of seven of Crowe's original *Rolling Stone* stories — including his first, about the Allman Brothers Band, which provided much material for the Oscar-winning screenplay. Watch out for the two-disc set coming later this year; it will contain a director's cut that's a half-hour longer. **English, Dolby Digital 5.1, DTS 5.1, and Dolby Surround; letterboxed (1.85:1) and anamorphic widescreen; dual layer.** *Ken Korman*

## THUNDERBIRDS, VOL. 1

A&E

Series **★★★½** DVD **★★★★**

It is probably safe to say that anyone who has ever seen producer Gerry Anderson's '60s sci-fi puppet TV shows has never forgotten them. The disconnect between the ultra-believable sets and model work and the, er, woodiness of the oddly proportioned characters is just too delightfully surreal. *Thunderbirds* (1965) was the best, featuring a patriarchal family of high-tech do-gooders, cool space ships, and excellent *Dr. No*-ish villains. Among the many memorable supporting characters was (and I don't care if she was a puppet, she was a major babe) the regal Lady Penelope, a sort of Mrs. Peel who drove around in FAB-1, a shocking-pink Rolls Royce equipped with machine guns.

Revisiting the show on this six-episode two-DVD set, what's truly amazing is not the effects work (Anderson would do better with *Space 1999*, also now available from A&E) but the quality of the writing. Appearances to the contrary, these are not strictly kiddie shows; in fact, the scripts are generally indistinguishable from live-action fare for adults from the same era, and sometimes they're considerably more sophisticated.

The DVD transfers are by and large sensational. There's a bit of dirt on some frames, and the occasional scratch, but otherwise the picture quality is razor sharp (although the color seems to have faded just a smidge). Music and dialogue are still the original mono (straight up the center), but all the explosions and spaceship noises that resonate effectively in the surround channels are obviously newly dubbed, their much wider dynamic range a giveaway. Extras include production stills and a fun 1965 making-of featurette. **English, Dolby Digital 5.1 and Dolby Surround; full frame (1.33:1); two dual-layer discs.** *Steve Simels*



Mad about the boy: maternally instinctive Frances McDormand in *Almost Famous*

## BLACK NARCISSUS

Criterion Collection/Home Vision Movie **★★★½** DVD **★★★★★**

## I KNOW WHERE I'M GOING!

Criterion Collection/Home Vision Movie **★★★½** DVD **★★★★**

**B**lack *Narcissus* (1947), the second most celebrated of the Michael Powell and Emeric Pressburger collaborations (after *The Red Shoes*), is one of the most enthralling visual experiences on film. Rumer Godden's novel about nuns in a Himalayan mission colliding with thin air, innocent sensual pleasure, and their own inner darkness was shot in a highly stylized manner in the studio. Seen through Jack Cardiff's amazing Technicolor photography, the settings are endlessly insinuating and unsettling. Even the nuns'

white habits seem like traps, leaving only the faces of Deborah Kerr, Flora Robson, and the frightening Kathleen Byron as outlets for their inner feelings. Dramatic events do occur, but it's the visual element that ties them all together.

*I Know Where I'm Going!* (1945) is my own favorite Powell-Pressburger movie, in which a "modern" girl (Wendy Hiller), on her way to marry an aged tycoon, finds herself marooned by bad weather on a Scottish island and in the constant company of a gallant naval officer (Roger Livesey). You know where the movie is going quickly enough, but the trip — filled with comedy, romance, adventure, and plenty of Scottish atmosphere — is one of the most enjoyable on film. If the movies have offered a better love story, I haven't seen it.

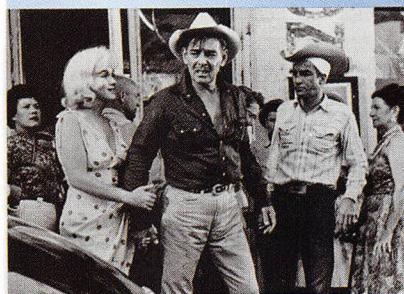
The *Black Narcissus* transfer is spectacular, with shadows rendered as faithfully as the stunning colors. While the black-and-white film elements of *I Know Where I'm Going!* show some age, the transfer is basically fine. The *Black Narcissus* DVD includes a commentary track by Powell and Martin Scorsese, a new documentary on cinematographer Cardiff, and stills. The *Going* DVD has an audio essay commentary, a 1994 documentary, and a photo essay. In addition, there are some of Powell's location home movies, production stills, and long sections from another Powell feature, *The Edge of the World*. **Black Narcissus:** English, Dolby Digital two-channel mono; full frame (1.33:1); dual layer. **I Know Where I'm Going:** English, Dolby Digital mono; full frame (1.33:1); dual layer. *Sol Louis Siegel*

## TIP Sheet

## Coming Releases

### THE MISFITS

If you've been collecting the recent Marilyn Monroe DVD releases, don't miss this one. Co-starring with Clark Gable and Montgomery Clift in John Huston's adapta-



tion of Arthur Miller's screenplay, she has one of her finest roles. **MGM, June**

### SNATCH

Writer/director Guy Ritchie delivers another Tarantino-Lite crime flick filled with colorfully individual underworld types. Extras include a commentary, interviews, and outtakes. **Columbia TriStar, July**

### V

The complete (and completely addictive) alien-invasion TV miniseries including several fun extras. **Warner, July**

## MANHUNTER

Anchor Bay

Movie **★★★★** DVD **★★★**

**M**ichael Mann's mesmerizing 1986 film, the first episode in the Hannibal Lechter saga, is a modern American horror masterpiece. The anxiously awaited DVD, in a two-disc limited edition that includes both a director's cut and the theatrical version, is, alas, a mixed bag.

The theatrical version, awash with cinematographer Dante Spinotti's surreal green and blue palette, looks splendid in this steak-knife-

sharp rendition. The Dolby Digital 5.1 remix further enhances the awesome visuals, creating a flesh-crawling audio whirlpool of seemingly unending terror.

The director's cut is actually a better movie, especially with an unsettling restored segment near the finale that literally changes the story's outcome. Unfortunately, the sloppy, shaky transfer is nonanamorphic and also recklessly omits crucial information on the left side of the screen. Worse are the soft, muddy images, with colors smeared and many of the complex, darkly lit scenes degenerating into black. The soundtrack, in Dolby Surround, not surprisingly lacks the depth of the theatrical cut's mix. For the best of both worlds, view the theatrical version and supplement it with Chapter 28 of the director's cut. **Theatrical cut: English, Dolby Digital 5.1 and Dolby Surround; letterboxed (2.35:1) and anamorphic widescreen; dual layer. Director's cut: English, Dolby Surround; letterboxed (2.35:1); single layer.**

Mel Neuhaus

#### LA GRANDE BOUFFE

Image

Movie **★★★** DVD **★★★**

#### THE DISCREET CHARM OF THE BOURGEOISIE

Criterion Collection/Home Vision

Movie **★★★★** DVD **★★★★**

#### BABETTE'S FEAST

MGM

Movie **★★★★** DVD **★★★★**

**T**oo much food, food denied, and food just right are the centerpieces of these three European classics. In Marco Ferreri's *La Grande Bouffe* (Blow-Out, 1973), four reasonably well-off middle-aged men (Marcello Mastroianni, Michel Piccoli, Philippe

Noiret, and Ugo Tognazzi) perform the ultimate act of decadence: they gather in an old house to eat themselves to death. Their debauchery, mixed with sex, is as notable for its obsessive joylessness as for its outrageous abundance and disgusting biological processes. This satire of modern excess is singularly melancholic, especially in this disappointing pan-and-scan DVD transfer. Details disappear in the darkness — and with them, many of the film's sensual qualities.

The gathering of friends for food and drink was a ritual much loved by Luis Buñuel. In *The Discreet Charm of the Bourgeoisie*, the Best Foreign-Language Film of 1972, he plays a little trick on his six main characters, all of them corrupt, well-bred, well-dressed parasites: they keep gathering for this ritual, and it keeps getting interrupted, by everything from gangsters to terrorists to several varieties of ghosts. In Buñuel's world, the absurd is perfectly normal, which makes the normal seem all the more absurd, and it's all done with effortless ease and, yes, charm. The lovely new anamorphic transfer is absolutely faithful to the film's restrained color scheme. A second disc contains a recent 98-minute documentary on Buñuel's life and films.

Fifteen years after acting in *Discreet Charm*, Stéphane Audran went on to star in a film that won the same Oscar, 1987's *Babette's Feast*. In Gabriel Axel's beautifully simple, richly executed adaptation of the Isak Dinesen story, she plays the French cook who ends up in coastal Denmark as the treasured servant to the daughters of a long-dead religious reformer. When she insists on celebrating their father's centenary with a gourmet dinner, the aging, dwindling flock is understandably dumbfounded. The film is nearly as perfect as

Alley cat: Dexter Gordon groovin' in the gutter in 'Round Midnight'



the banquet it portrays, glowing with humanity and subtle humor as much as with candlelight. A gorgeous DVD transfer and a fine Dolby Surround soundtrack make it a visual and aural delight. If you must, there's also a fast-food English mono dub. **La Grande Bouffe: French, Dolby Digital mono; pan-and-scan; dual layer. Discreet Charm: French, Dolby Digital mono; letterboxed (1.66:1) and anamorphic widescreen; dual layer. Babette's Feast: French/Danish and Spanish, Dolby Surround; English, two-channel mono; letterboxed (1.66:1); single layer.**

Sol Louis Siegel

#### BIRD

Warner

Movie **★★★** DVD **★★★**

#### 'ROUND MIDNIGHT

Warner

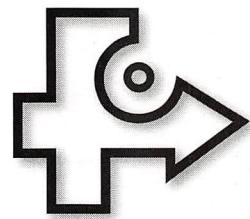
Movie **★★★★** DVD **★★★★**

**K**en Burns's 19-hour *Jazz* did much to renew interest in the great American art form, and it probably had a hand in the DVD release of two of the highest-profile jazz movies ever made. Clint Eastwood's *Bird* is a straightforward biopic of Charlie "Bird" Parker, the brilliant tenor saxophonist who almost singlehandedly invented bebop in the early 1940s. Sure, Parker was also a tragic figure who drank and drugged himself to death at the age of 34, but it's surprising that jazz fanatic and accomplished pianist Eastwood chose to dwell on Parker's personal demons at the expense of the fascinatingly complex music. Parker's gradual dissipation doesn't generate much drama, resulting in an overly long and oddly flat film. Only the soundtrack — which blends *Bird*'s original solos with newly recorded accompaniment — keeps the film flying.

Bertrand Tavernier's looser and more satisfying *'Round Midnight* blends fiction with memorable details from the lives of jazz giants like Lester Young and Bud Powell. It's light on plot, focusing mostly on the friendship between an aging tenor player and the troubled young fan who hopes to save the musician from himself. But if the purpose here is to capture the feel of post-bop jazz and the essence of those who created it, the film is a smashing success.

Both discs recreate dim, smoky clubs to compelling effect, but the real test here is the Dolby Digital 5.1 remix of each film's soundtrack. *Bird*'s subtle use of the format adds a little space to a formerly claustrophobic '40s sound. But *'Round Midnight* is warm, resonant, and irresistible in 5.1, with a careful mix that fulfills the potential of full-tilt multi-channel music. Turn it up! **Both: English, Dolby Digital 5.1; anamorphic widescreen. Bird: French, Dolby Surround; letterboxed (1.85:1); single layer. 'Round Midnight: letterboxed (2.35:1); dual layer.**

Ken Korman



## CONTINENTAL DRIFTERS

### Better Day

Razor & Tie

Music ★★★★★

Recording ★★★★★

There are times when everything just comes together. The Continental Drifters went into their third album with a long history, approaching ten-year status as one of America's most overlooked and flat-out finest bands. By the time they booked three weeks in the studio in January, they were facing pressures both professional and personal: singer/guitarist Vicki Peterson was getting recommitted to her former band, the Bangles, while singer/keyboardist Peter Holsapple and singer Susan Cowsill had recently ended their marriage. With no choice but to pour it all out in a hurry, they wound up painting their masterpiece.

Hold on a second — didn't we say something similar about the Drifters' last album, *Vermilion*? Yes, but there's a difference: *Vermilion* was mostly songs they'd played live for years, so it had the feel of a retrospective instead of a spur-of-the-moment statement. It also wound up a little ballad-heavy. *Better*

Day is two songs shorter, but it has a fuller share of everything the band can do, including good old garage rock and stellar pop harmonies. Add to that a few new wrinkles: Peterson's "That Much a Fool" is the Drifters' first real country song, while "Tomorrow's Gonna Be" — only the second song that bassist Mark Walton has written for the group, and the first he's sung — has a Southwestern cantina feel. Meanwhile, rest assured that the ballads here, mostly Cowsill's this time around, are still gorgeous.

Intentionally or not, *Better Day* comes across like a loose concept album about finding love and inspiration despite the odds. And though it doesn't skimp on heart, it never settles for easy sentiment. Peterson's opener, "Na Na," tells a dogged survivor's story, but the sound is pure, uplifting pop. When the band crashes in after the first chorus and the three-part harmonies kick in, you know you're in good hands. The uplift continues with Holsapple's Southern-soulful "Live on Love" and Cowsill's jangly "Someday," which, respectively, evince the melodic knack the songwriters gained with the dB's and the Cowsills.

If the first half shows how well the Drifters can rock, the second gets down to the emotional point. The two divorce-themed songs gain poignancy from being placed

**The band that plays together . . . (left to right): Mark Walton, Peter Holsapple, Vicki Peterson, Robert Maché, Susan Cowsill, and Russ Broussard**

back to back. Holsapple's "(Down by the) Great Mistake" is both blustery and gallows-humored, with music that channels the Sir Douglas Quintet and words that ask the tough questions. It's answered by Cowsill's "Peaceful Waking," one of the warmest and most generous breakup songs you'll ever hear.

*Better Day* is one of those cases where personal turmoil leads to timeless pop. . . . Can I get through this review without mentioning *Rumours*? Just about. *Brett Milano*

*Editor's note:* As we were going to press, the release date for *Better Day* was changed. Look for it on June 5 — after which the band will begin a nationwide, summer-long tour.

## AEROSMITH Just Push Play

Columbia

Music ★★ Recording ★★

The advance hype sure sounded good, promising that Aerosmith had made a raw, back-to-basics album — something the band hadn't done since 1985's *Done with Mirrors*, the most underrated album in its catalog. The clincher was that Steven Tyler and Joe Perry had taken over as producers for the first time in Aerosmith's history. Time to throw out all the song doctors, ditch the 1990s mega-production, and kick out the jams, right?

Not even close. After all that buildup, *Just Push Play* turns out to be the most overproduced album Aerosmith has ever made. Tyler and Perry are indeed behind the wheel, but so are L.A. hotshots Mark Hudson and Marti Frederiksen, who've practically joined the band. One or both gets a writing credit on every song (something that even Tyler and Perry don't manage), and their favored production tricks — drum loops, keyboards, strings, massed vocals — are high in the

## STAR SYSTEM

**Stellar** ★★★★★

**Excellent** ★★★★

**Good** ★★★

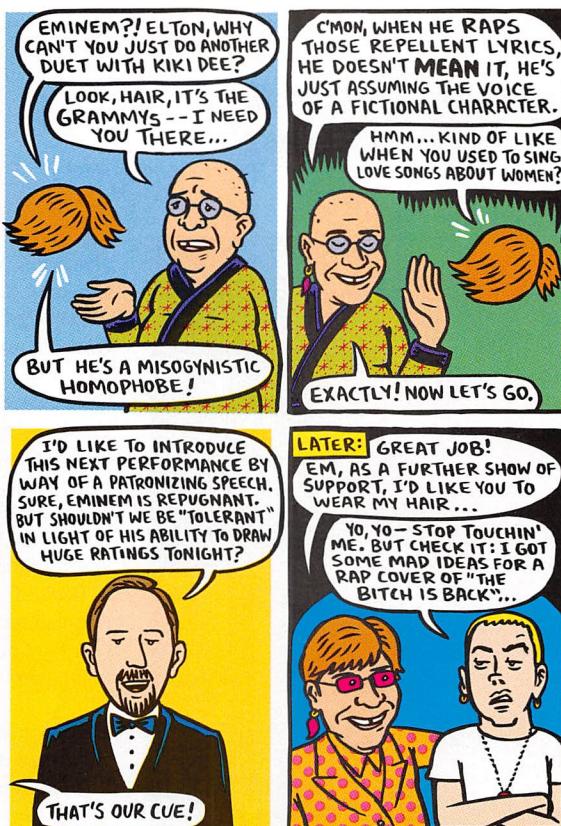
**Fair** ★★

**Poor** ★

**Music** refers to content alone.

**Recording** refers to sound quality and, where applicable, multichannel mix.

**SCHLOCK 'N' ROLL**  
presents  
THE CONTINUING ADVENTURES  
OF  
**ELTON JOHN'S HAIR**  
TONIGHT'S EPISODE:  
**"IF YOU CAN'T BEAT EM,  
JOIN EM!"**  
by WARD "HONKY CAT" SUTTON



mix while Perry and Brad Whitford's guitars are nearly MIA. And it's telling that every good song here ("Sunshine," "Avant Garden," "Trip Hoppin'," "Jaded") is a Beatles homage — after all, Hudson and Frederiksen's last client was Ringo Starr. But there's no blazing opener, no blues track, no Perry showpiece — hell, there are hardly any real rockers. Studio trickery murders the upbeat "Light Inside," and the title track jumps the Bizkit wagon two years too late.

Unfortunately, *Just Push Play* is already a bigger hit than 1997's far better *Nine Lives*, making the raw, back-to-basics album we're still waiting for that much less likely.

Brett Milano

### PHISH Bittersweet Motel

Image (DVD-Video)

Movie ★★★★ DVD ★★★★

Lensed by then-indie filmmaker Todd Phillips, *Bittersweet Motel* is a Woodstock-style documentary of Phish on tour (1997-98), both on and off the stage. The 85-minute movie excludes full-length songs and improvised segues (the band's real strength), but with repeated viewings of the DVD-Video, you get the sense that the random approach takes on a rhythm of its own. And although the movie is unlikely to make new converts, the dedicated will find much to enjoy, including many amusing chats (with Phish and their fans) and some fun with nudity for art's sake.

The picture is crisp and the sound first-rate. Although the full, warm Dolby Digital 5.1 mix uses the surround channels primarily for subtle hall ambience and crowd reaction, it makes appropriate changes according to the type of venue, becoming tighter and more immediate for European club dates and turning echoey for empty-house soundchecks. And thankfully, the movie is supplemented by 35 minutes of DVD extras, including priceless interview sequences as well as (yes!) four complete live songs (even if they're stereo only). This material helps balance the Trey Anastasio-heavy film, giving more of a spotlight to the other band members. It also provides the only hint of "fifth member" Chris Kuroda's dazzling light show. Another welcome extra is an enlightening (though text only) interview with Phillips by *Sound & Vision*'s Parke Puterbaugh. Of course, with more continuous concert footage, the music could have spoken for itself.

Andrew Nash

### DAFT PUNK Discovery

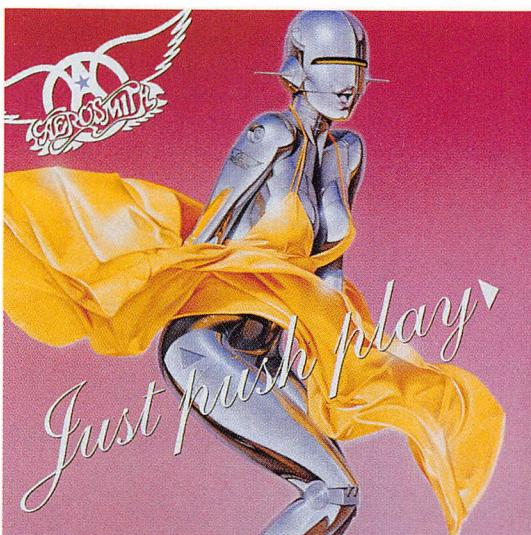
Virgin

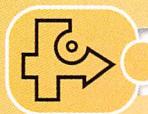
Music ★★★ Recording ★★★★

The French duo Daft Punk is an image-driven band — an odd position to be in for two musicians who favor anonymity. Their 1997 debut, *Homework*, benefited from clever videos by top director-artistes. And "One More Time," the first single from *Discovery*, has gotten a full-blown treatment by no less than anime legend Leiji Matsumoto.

But anime or no anime, "One More Time" is a sour starting note for the album, since it's a boring dance track that doesn't go anywhere. The songs that follow redeem the disc

Two mod cons? Aerosmith, daft to think they're punks again, and Daft Punk, airing out their smithery.





somewhat by serving up beats in appealing pop, funk, and soul flavors. Often, though, it seems like we're listening to tracks culled from several different albums, rather than a unified effort.

Both "Digital Love" and "Harder, Better, Faster, Stronger" channel the Buggles, those MTV prototypes, in their fusion of searing synths with symphonic flourishes and creative vocoding. And the moody, absorbing instrumental "Nightvision" is reminiscent of fellow French duo Air. But Daft Punk finally hits its stride in the hypnotic techno tracks "Voyager" and "Veridis Quo" — two of the disc's most stripped-down songs and, interestingly, the ones that seem closest in spirit to *Homework*.

Al Griffin

## VARIOUS ARTISTS

### A Nod to Bob: An Artist's Tribute to Bob Dylan on His Sixtieth Birthday

Red House

Music ★★★ Recording ★★★

### BOB DYLAN

### Bringing It All Back Home

Columbia/Sundazed (vinyl LP)

Music ★★★★ Recording ★★★

**Y**es, May 24 is Bob Dylan's 60th birthday, hence the party thrown by Red House Records, a refuge for folk artists. In aggregate, they are smitten with mid-1960s Dylan on *A Nod to Bob*. Although his career spans five decades, nearly all of the 14 selections date from the years 1963 to 1967.

Yet within this narrow span is tremendous variety: an intensely poetical love song ("Love Minus Zero/No Limit," covered exquisitely by the dusky-voiced Eliza Gilkyson), an antic, ambling blues ("Pledging My Time," sung with a knowing growl by Greg Brown), and a goofy, surrealistic sketch of small-town America ("Clothes Line Saga," sung with straight faces in close harmony by Suzy and Maggie Roche). While Jimi Hendrix recast "All Along the Watchtower" as an electric anthem, Vancouver's Paperboys give it a rollicking Celtic makeover that's plenty radical, too. The best track is Ramblin' Jack Elliott's plain take on "Don't Think Twice, It's All Right," which is preceded by a hilarious yarn about how he came to learn the tune.

Meanwhile, Sundazed celebrates with a 180-gram vinyl LP reissue of *Bringing It All Back Home*, Dylan's half-electric, half-acoustic, and altogether brilliant fifth album. Released in 1965, it had purist folkies muttering "Judas" to themselves, as it included an entire side of ribald, roustabout songs (among them, the tongue-twisting "Subterranean Homesick

**S**lim pickings this month, folks — in quantity, not necessarily in quality. The picking by banjo virtuoso **Béla Fleck** is anything but slim on the Warner Bros. reissue of *The Bluegrass Sessions: Tales from the Acoustic Planet, Vol. 2* (Music ★★★★, Recording ★★★★). Jake Niley did the six-channel remix with the help of Fleck (the original producer) and Richard Battaglia (one of the original engineers), so the result is a steady, natural, and sensible surround. Fleck is in the left front channel, guitarist Tony Rice in the right front, mandolinist Sam Bush in the left surround channel, and Dobroist Jerry Douglas in the right surround. All four players are treated as equals. Stuart Duncan's fiddle solos are in the two right speakers, and Mark Schatz's bass is in both the center channel (joined by Rice's guitar) and the subwoofer — a little too heavily in the latter, it must be said. But that's the only sonic flaw on a disc that even handles the "harmony volkas" judiciously.

If only the same near-perfection were true of the disc's "extras." Basically, there are none. Sure, the usual photo gallery of musicians is here, but there are no bios, and the program notes are merely repeated from the booklet. So, speaking of picking . . . the Warner Music Group must *pick up the slack* in this department.

Lo and behold, it tries to do just that with the Atlantic/Rhino reissue of **Foreigner**'s self-titled debut (Music ★★★, Recording ★★★). Here we have the Warner family's first commentary track on DVD-Audio, similar to the bonuses that have now become standard for movies on DVD-Video. But alas, guitarist Mick Jones and singer Lou Gramm, though occasionally humorous and informative, mostly come across as mildly lunkheaded. By Track 8, they're struggling to come up with something to say. Meanwhile, you also get videos ("Feels Like the First Time," "Cold as Ice"), but they're primitive. And among the four demos provided, only one (for "Feels Like") is revealing; another (for the unreleased "Take Me to Your Leader") is embarrassing.

As with the earlier Emerson, Lake & Palmer and Deep Purple reissues, the Foreigner remix was in the hands of John Kellogg, assisted by Paul Klingberg. (I was mistaken last month when I wrote that Purple's *Machine Head* was remixed solely by Klingberg.) They've done the best they could with an original recording that, despite being transferred to DVD-Audio, still sounds like a dry relic from the 1970s. I can't really blame them for occasionally overcompensating in the surround channels with pumped vocals and synths. And there are welcome moments, too, like the de-

tailed interplay between keyboards and guitar in the second verse of "Cold as Ice."

For Warner's most recent classical titles on DVD-A, see page 121. As for other popular titles, we're left with three new compilations from the 5.1 Entertainment Group's Silverline label, each drawn from the Capitol/EMI catalog. The best is **Classic Country** (Music ★★★, Recording ★★★★). Not everything here is as classic as Willie Nelson's "Crazy," but the six-channel mix, for the most part, is admirably subtle. Actually, there are four different mixes, since the songs are divided among four mixers.

The same goes for the other two discs, and this can cause trouble. **Women on Top** (Music ★★★, Recording ★★★) has Murray McFadden doing an artful mix of Blondie's "Heart of Glass," but it also has Dennis Mays going ballistic with Pat Benatar's "We Belong," forcing synths to taunt me and percussion to slap me from behind.



Tracking vinyl? Peter Wolf of J. Geils

Even more schizo is **Classic Rock** (Music ★★★, Recording ★★★). On one hand, Ken Caillat does a sympathetic mix of Billy Idol's "Rebel Yell." On the other hand, Rick Ruggieri seems to suck the life out of Joe Cocker's "When the Night Comes" and Billy Squier's "Everybody Wants You," both of which sound like early CDs. Three other tracks aren't even true discrete six-channel mixes. Then again, Claus Trelby's mix of the J. Geils Band's "Centerfold" is *too* discrete, divorcing the vocals, handclaps, and drums from each other. There's no impact here — this in a recording that's all about impact. Then, suddenly, Dennis Mays redeems himself with a stunning resurrection of Canned Heat's "On the Road Again."

I'm worn out, except to say the obvious: the 5.1 Group should pay more attention to sonic consistency. It should also think about redesigning and restocking its drab-looking, extras-challenged compilations if it doesn't want to become known as the K-Tel of DVD-Audio. Ken Richardson



Snickers



Raisin Bran



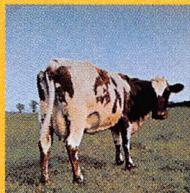
Britney



Jennifer



Janet



Crunchy cow

## CRUNCHY FROG?



Snickers Cruncher



Raisin Bran Crunch



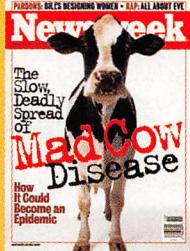
Britney Crunchy



J. Lo Crujido



Janet Crunch-it



Not crunchy cow

Blues") driven by electric guitars and drums. The other side offered four unplugged episodes: "Mr. Tambourine Man," "Gates of Eden," "It's Alright, Ma (I'm Only Bleeding)," and "It's All Over Now, Baby Blue." Not a bad patch of songwriting, and Sundazed brings it all back home in glorious, unadulterated mono sound on pristine vinyl — this in the age of six-channel surround sound on DVD! That's Dylan for you: a contrarian to the core, even when he's not explicitly involved.

Parke Puterbaugh

### THE BLACK CROWES Lions

V2

Music ★★★ Recording ★★★★

The Black Crowes' sixth album is equal parts butt-rocking slow boogie and more melodic, often trippy tunes. While competently played, the boogie stuff ("Midnight from the Inside Out," "No Use Lyin'") is like beef jerky for the ears — or a plateful of Humble Pie circa *Eat It*. The Crowes kick it up a notch in "Lickin'," which is as funky as a used skillet, and the white-hot "Come On," a chugging fury of riffs and rhythm with some of Chris Robinson's sharpest vocal turns. The trippiest stuff has the band attempting kandy-kolored OutKast-style hip-hop in "Ozone Mama" and affecting a Parliament-Funkadelic-type chant in "Young Man, Old Man." Both endeavors fall shy of the mark.

The heart of *Lions*, where the Crowes sound like themselves while breaking new ground, comes in the middle with "Greasy Grass River" (a stoned groove for real!) and "Soul Singin'," a Southern-rock raga with an uplifting chorus about getting back to soul central. And they're followed by "Miracle to Me," a ballad that ranks with their best. This trifecta of tunes could have served as the core around which a more solid album was built. As it

stands, *Lions* is a mixed bag — albeit one I'm happy to have around. — Parke Puterbaugh

### ANNE SOFIE VON OTTER MEETS ELVIS COSTELLO For the Stars

Deutsche Grammophon

Music ★★★★ Recording ★★★★

Considering the gradual turn toward modern lieder-type balladry that Elvis Costello's career has taken, it's no surprise that he decided to do a hands-on production of pop songs for the much-admired mezzo-soprano Anne Sofie von Otter. What is surprising is how well *For the Stars* works — how little there is of that combination of mannered delicacy and vocal overpowering that often happens when an opera singer goes pop.

With a carefully eclectic selection of songs and (I suspect) a little coaching from Mr. C,

Von Otter displays a flexibility that allows her not only to sing beautifully but to throw in some interpretive color. Although she's responsive to songwriters ranging from Anna McGarrigle to Tom Waits, she's particularly effective in two Brian Wilson songs from *Pet Sounds*, proving to be comfortable with their expansively sad melodicism. Only in Lennon-McCartney's "For No One" does she fall back on excess daintiness. As a bonus, Costello contributes some original lyrics and even sings occasionally — and, of course, he's never dainty, even in his new role as a bruised romantic.

Richard C. Walls

## JAZZ

### BOB BELDEN Black Dahlia

Blue Note

Music ★★★ Recording ★★★★

Saxophonist, arranger, and composer Bob Belden, who has given us interpretations of Prince, Puccini, and Lennon-McCartney (among others), has now devised an hour-long fantasia on the theme of the infamous unsolved murder of Elizabeth Short, a.k.a. the Black Dahlia. An aspiring actress in postwar L.A., Short was killed in such grisly fashion that she has become a mythic symbol of Hollywood's sordid underbelly, and a grim muse for writers like John Gregory Dunne and James Ellroy. Belden's 12-part meditation on her life and death is, for the most part, appropriately somber, with soloists like trumpeter Tim Hagans and saxophonist Joe Lovano improvising moodily over darkly colored orchestrations.

Despite a few uptempo respites (most notably the Latin-jazz blowout in "The Edge of Forever"), the music tends to lull as often as it engages. And while Belden's arrangements

### TIP Sheet Coming Releases

#### LUCINDA WILLIAMS Essence PATTY LOVELESS

##### Mountain Soul

Lucinda follows up *Car Wheels on a Gravel Road*. Patty "returns to her Appalachian roots." *Lost Highway*/Universal (Williams) and *Epic Nashville* (Loveless), June

#### THE ELECTRIC LIGHT ORCHESTRA Zoom

Er, a.k.a. ELO, with Jeff Lynne. *Epic*, June

#### RUFUS WAINWRIGHT Poses LOUISE GOFFIN

##### Sometimes a Circle

The offspring — Rufus from Loudon Wainwright III and Kate McGarrigle, Louise from Gerry Goffin and Carole King. *DreamWorks*, June (Wainwright) and July (Goffin).

# Quick Fixes

## AMERICAN HI-FI

### Island

Music ★★★ Recording ★★★★

As long as garages are still standing, somebody's going to be making good, honest rock albums like this one. Debuting as a frontman, ex-Letters to Cleo and Veruca Salt drummer Stacy Jones proves a capable singer and a gifted slinger of hooks. Bob Rock's savvy production makes it just modern enough to get on the radio, but behind the sound is a band with Raspberries in its blood.

Brett Milano

## CLASSICAL

### ORFF *Carmina Burana*

Soloists; London Philharmonic Choir and Orchestra, Zubin Mehta cond.

Teldec (DVD-Audio)

Performance ★★★★

Recording ★★★★

### MAHLER *Symphony No. 2*

Soloists; Prague Philharmonic Choir, Israel Philharmonic Orchestra, Zubin Mehta cond.

Teldec (DVD-Audio)

Performance ★★★

Recording ★★★

**T**he more satisfying of these two DVD- Audio programs conducted by Zubin Mehta is his 1992 recording of Orff's most popular and enduring creation. The soloists (soprano Sumi Jo, baritone Boje Skovhus, and alto Jochen Kowalski) are all excellent, and Mehta draws a strong performance from the London Philharmonic forces.

Furthermore, the work's celebration of life's sensual pleasures is captured in this DVD's spirited and enveloping six-channel mix. Positioning and perspective seem just right, creating a sonic environment that is inclusive without being overwhelming. English, French, and German translations (though not the original Latin) are offered onscreen with each selection. Perfunctory bios and program notes can be cued up separately from the music.

There are impressive moments musically and sonically on the disc of Mahler's Symphony No. 2, but neither the performance (from 1994) nor the six-channel mix holds together as a unified concept. Mehta draws solid, if not exceptional, performances from the Prague choir and the Israel orchestra. Contralto Florence Quivar provides passion and urgency in the "Urlicht" ("Primeval Light") solo song of the fourth movement and when she's joined by soprano Nancy Gustafson in the fifth.

Tobias Lehmann, who did the Orff remix, returns here as "balance engineer." How, then, to explain this disc's spatial and tonal inconsistencies from section to section? Sometimes the use of the surrounds for brass and percussion is effective; other times it seems to be for effect. And though the final movement's choral apotheosis is impressive, it fails to deliver the catharsis that a truly integrated performance of this symphony can offer. Extras are once again minimal.

Robert Rippis

### JOHN HAMMOND *Wicked Grin*

Pointblank/Virgin

Music ★★★★ Recording ★★★★

Lots of people have covered Tom Waits, but no one's ever gotten to the heart of the matter any better than bluesman Hammond does on this set of all-Waits material — produced by the Duke of the Disheveled himself. Hammond wades through these dozen swampy tales of damaged human goods and services with the Delta-bent perspective of someone who has been there, big time. "I'm stirring my brandy with a nail," he yowls. Is there any doubt it's a rusty one?

Billy Altman

### DELBERT MCCLINTON *Nothing Personal*

New West

Music ★★★★ Recording ★★★★

From an old Texas R&B hand like McClinton, you'd expect competence and a good time. What's surprising about *Nothing Personal* is its sustained excellence and unrelenting fire. McClinton rips it up in honky-tonk rockers like "Livin' It Down" and "Squeeze Me In." And the Tex-Mex ballad "When Rita Leaves" aches so hard you get teary for the spurned lover's torched Mustang.

Parke Puterbaugh

### JOHN FRUSCIANTE *To Record*

#### Only Water for Ten Days

Warner Bros.

Music ★★★ Recording ★★★

In which our intrepid guitar hero — drug-free and returned to the Californicatin' Red Hot Chili Peppers — delivers a relatively inspired set of D.I.Y. pop, a far cry from his two previous, muddled solo efforts. The fuzz-infested "Going Inside" sets the album's mostly introspective tone, while "Away & Anywhere" spirals hypnotically with a jangly riff and a haunting chorus.

Mike Mettler

### THE BLAKE BABIES *God Bless the Blake Babies*

Zoë/Rounder

Music ★★★★ Recording ★★★★

The Blake Babies epitomized college rock in all its naive glory in the late 1980s and early '90s. *God Bless*, a one-off reunion, is their grad-school thesis. Juliana Hatfield's little-girl-unloved voice still has both venom and pathos,

but a wistful maturity runs through the record as these grown-up Babes take the measure of their lives from a less-frenzied perspective. Particularly mesmerizing are the acoustic confessions "Waiting for Heaven" and "Until I Almost Died."

Parke Puterbaugh

## SHARON SHANNON & FRIENDS

### The Diamond Mountain Sessions

Compass

Music ★★★ Recording ★★★

Accordionist Shannon has been a leading light of Ireland's traditional-music scene for over a decade. This set features a host of guest players and singers (Steve Earle, Jackson Browne, Donal Lunny), and it should increase her international profile. However, the ensemble approach tends to obscure Shannon rather than showcase her. Listeners familiar with her considerable talents will likely be frustrated by the results; she seems more like just another visitor than the catalyst to her own work.

Billy Altman



### BOZO ALLEGRO *Relentlessly Cheerful*

Marx Music

Music ★★★ Recording ★★★★

Yes, that's the Bozos' CD shown above, with a look that won't surprise those who dug their freewheeling Beatlefest, *The Revolver Suite*. Here, the bigish band plays it straighter with original material. Still, they're nice and loose, especially in "Coreatown" and, ahem, "Rise and Fall of the Glass Reich."

Ken Richardson

### GREG TROOPER *Straight Down Rain*

Eminent

Music ★★★★ Recording ★★★★

Trooper is a New Jerseyite who wound up in Music City, melding his rock & roller's upbringing with the craftsmanship of the C&W world. *Straight Down Rain*, his fifth album, is a ripe batch of plums by a talented singer/guitarist who writes about the familiar without resorting to cliché. Indeed, "Real Like That" nails down commonplace feelings with uncommon lucidity. (Memo to Garth Brooks: cover this song!)

Parke Puterbaugh

### PAUL BLEY/EVAN PARKER/ BARRE PHILLIPS *Sankt Gerold*

ECM

Music ★★★★ Recording ★★★★★

Recorded live in an Austrian monastery, this is free improvisation of a high order, alternating between the pensively abstract and the joyously expressive. Along with the usual telepathic conversations, each member gets a few feature spots, with pianist Bley and bassist Phillips doing the lyrically introspective stuff and saxophonist Parker doing the howling-madman bit. Good show.

Richard C. Walls



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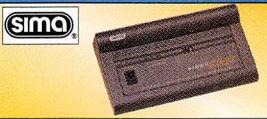
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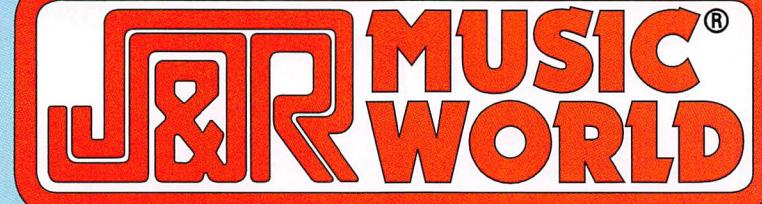
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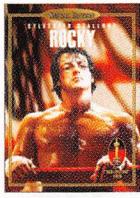
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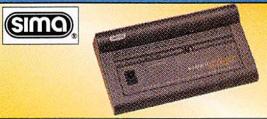
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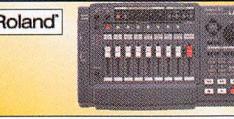
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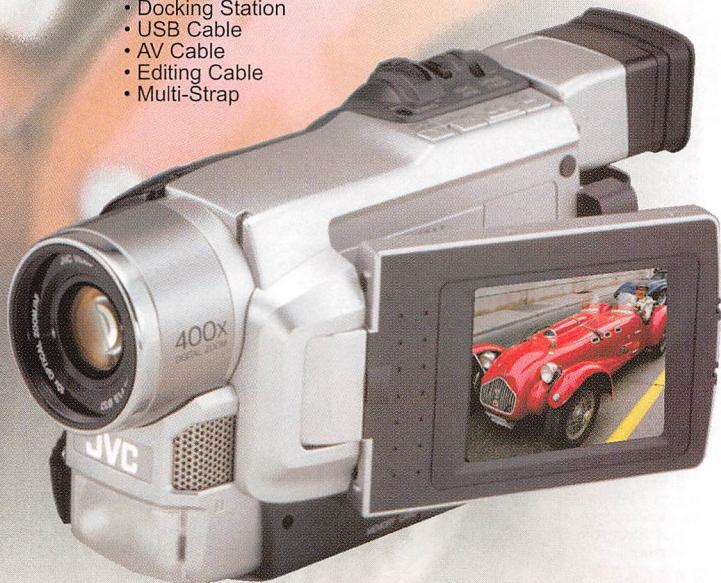
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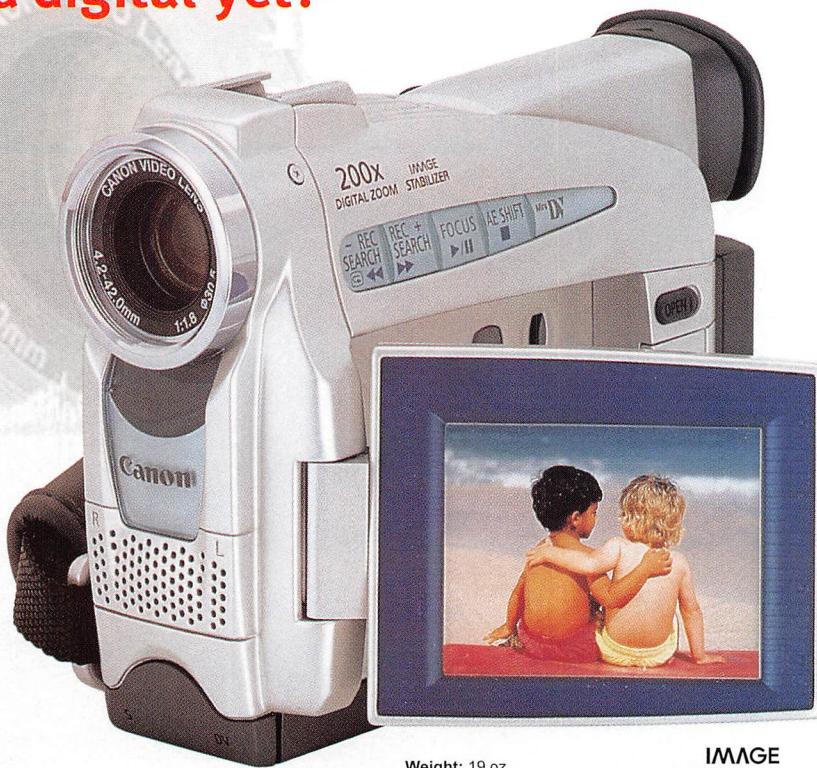
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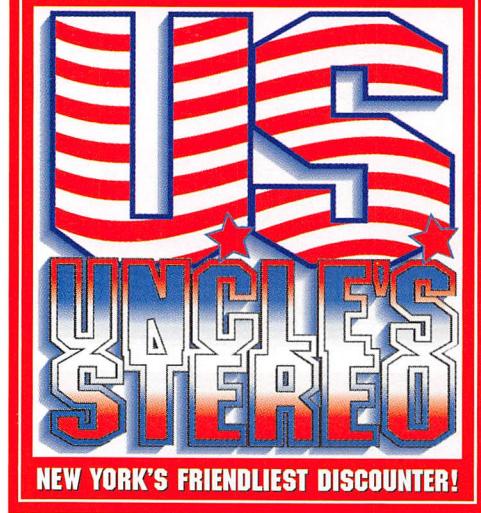
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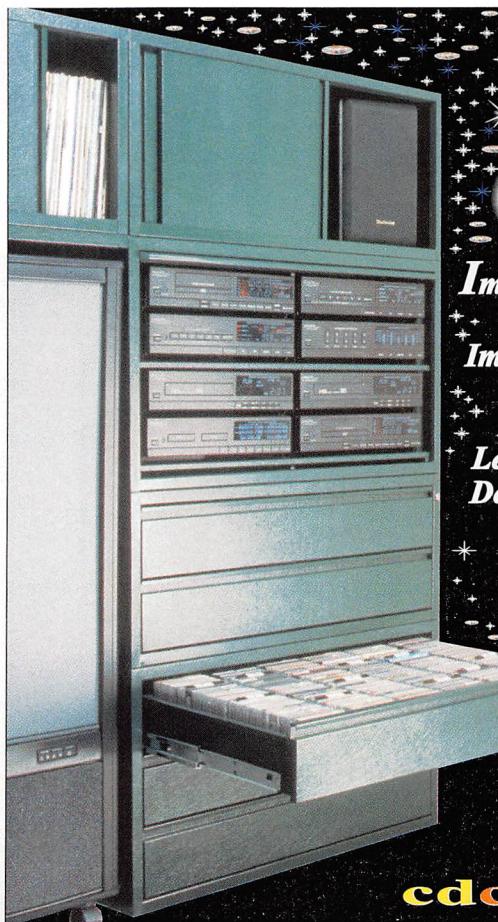
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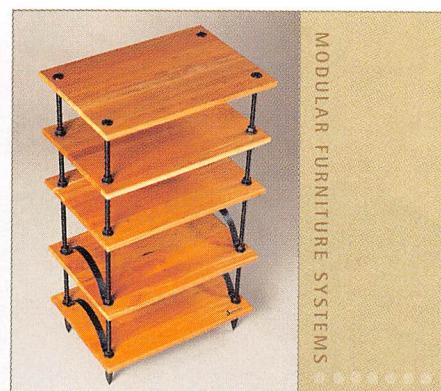
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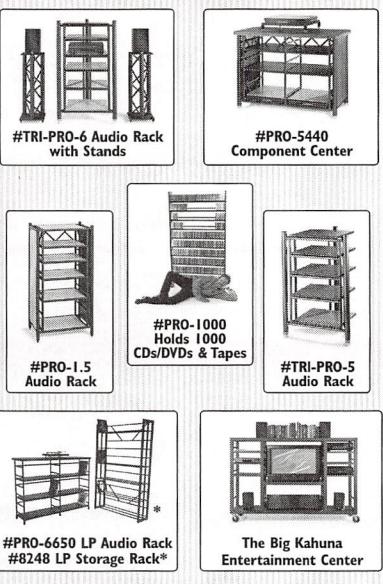
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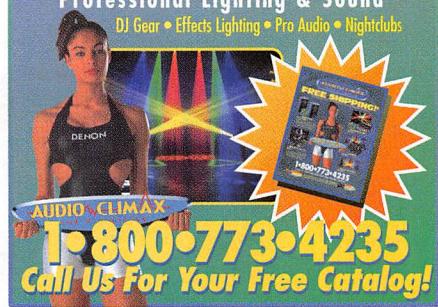
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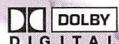
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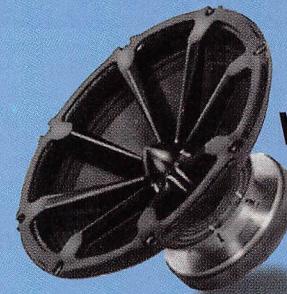
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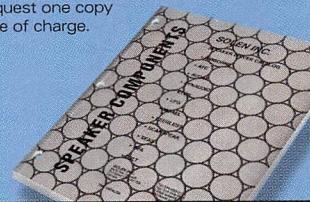
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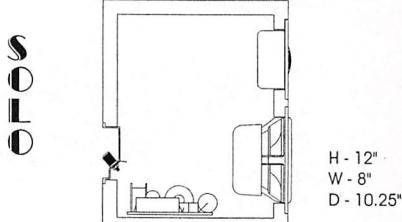
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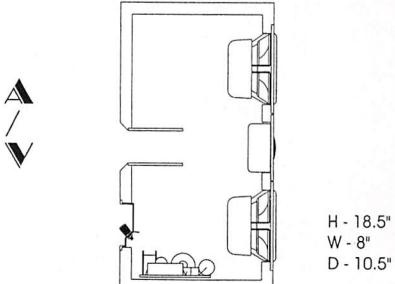
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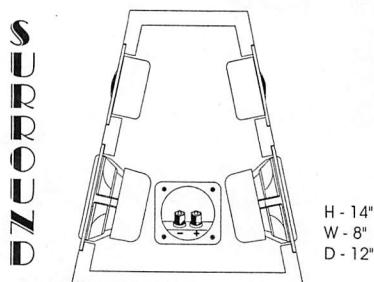
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The preceding designs were developed using our anechoic chamber, **Audio Precision** measurement and **Leap** analysis. All three systems use the **Vifa M13SG09** woofer. This is a 13cm damped paper cone cast frame woofer. The tweeter is the **D25ASG05**, which is also shielded and has a 25mm aluminum dome (also available with **D27SG05** silk dome). The cabinets are oak veneered fiber board, with solid rounded oak corners and a black grill. You may choose between black stained or clear oak finishes. Everything you need to complete the system is included. The crossovers are assembled and the cabinets are pre-cut for easy assembly. You can expect to assemble a pair of speakers in one evening. As with all **Madisound** kits, your satisfaction is guaranteed.



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# Inside Addition

**O**n hearing the news that RadioShack boutiques would be springing up inside Blockbuster Video stores, I became alarmed. Would we get a surfeit of power strips at the expense of action-adventure movie titles? The marketing geniuses reasoned that since the average RadioShack attracts disproportionately more men while Blockbuster draws more women, what better way to get more women to buy soldering irons than to put them next to the new movie releases? Well, how about replacing the Rust-Oleum rack at Ace Hardware with a Victoria's Secret display? What better way to get more women into the male preserve of nuts and bolts than to offer lingerie? "Would you like a padlock to go with that nightie, Ma'am?"

The more I thought about it, the more I realized that some serious synergy could be generated by juxtaposing diverse products. Storefront therapists, for instance, could do a bang-up business by hanging their shingles in the middle of Circuit City stores and specializing in obsolescence counseling. Like perfect symbiotes, a shrink and a sales clerk would team up. While one gently holds a customer's hand and utters soothing homilies about overcoming the fear of buying anything because there's always something better (or different) just over the horizon, the clerk runs his credit card through the reader. Considering the pace of innovation, both team members will be all but assured repeat visits. Heck, the obsolescence counselor will likely even try to tack on his own extended warranty — good for three sessions or three years, whichever comes first.

Over at Petland, Sony could sell more personality-enhanced Aibos by setting up a cage within the store and demonstrating how its pedigree-priced robot will pay for itself in only six months by saving the proud owner the costs of dog food, grooming, carpet cleaning, and visits to the vet. "How much is that dog-

gy in the window?" Depends on whether its tail is actually a power cord.

Beyond canines and counselors, the acutely hip store-within-a-store entrepreneur will likely pair electronics with fashion. For an upscale boutique, today's wearable electronics are high-profit-margin accessories, like belts or handbags. Personal music players are as much about the look as the beat, which helps explain why companies can sell MP3 players holding as little as 16 megabytes of music. If the player is cool enough, does it matter that there's room for only a handful of Britney Spears songs? The value of a digital player is judged not only by how much music can be squeezed into it but also by whether the player itself will fit in your pocket with room for a candy bar.

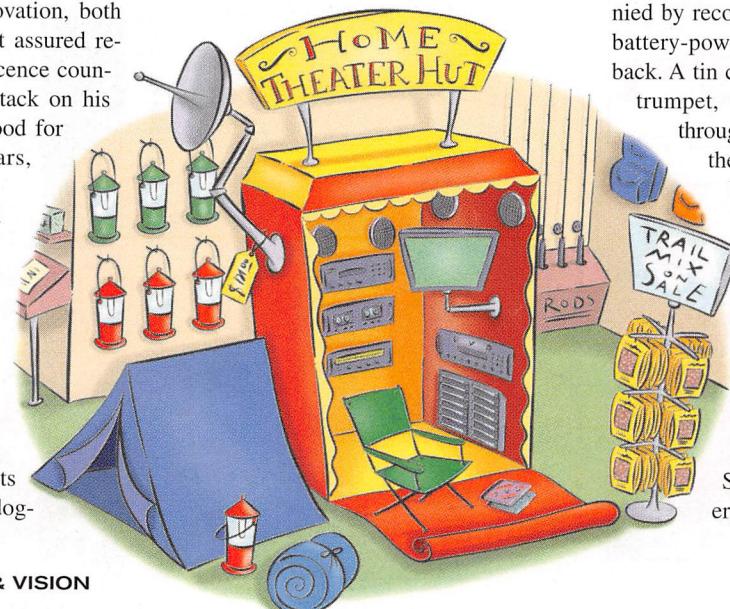
The trend toward gadgetry as fashion icons extends to behind-the-neck headphones, earphones on colored oval rings that hook around the lobe, designer cell phones, neckband radios, wrist-top organizers, even wearable speakers. Cambridge SoundWorks offers CarryBags for its transportable stereo speaker systems that let them play through mesh panels even while bagged up. A SoundWorks CarryBag with shoulder strap (under \$250) includes stereo minispeakers, a bass module with system amplifier, and a battery/recharger; a pocket holds the portable music player of your

choice. JVC's RS-WP1 Sports Portable System puts a CD/cassette/radio boombox in a backpack. In a nod to those pre-Walkman days of yore, when you needed muscles to lug around big sound, now you can share your musical tastes (or lack thereof) with everyone in earshot.

Though presumably the controls are always in scratching distance, the JVC backpack comes with a remote control. Clearly, its range will be wasted unless you deploy a trusted confidant to stand a few yards away and, in effect, press your buttons. Incidentally, an antishock feature lets you spin on your head for up to 40 seconds without interrupting the music. It's too bad formal wear went out with Cole Porter. Can you imagine the massive amount of hands-free electronics and media storage a haberdasher could install in a top hat?

If you're shopping for wearable speakers, you should be able to find them in a broader range of stores within stores than electronic kiosks in clothing boutiques. I'd start with home theater huts in sporting-goods stores. Look right under the trail-mix sign, next to those portable satellite dishes meant to mask the unruly sounds of nature by piping HBO into campsites.

I recently spotted one potential customer for wearable speakers — a trumpeter working the New York City subways. He managed to play his instrument accompanied by recorded music emanating from a battery-powered speaker strapped to his back. A tin cup hung from the front of the trumpet, allowing him to blow, walk through the car, and panhandle all at the same time. I was impressed by his ingenuity, but to replace his self-made contraption with JVC's spiffier Sports Portable System, he'll need to collect \$220 in change. And if the store-in-a-store movement catches on, soon he'll be able to buy it at the Straphanger's Store within the Transit Museum Gift Shop. One-stop shopping never had it so good.

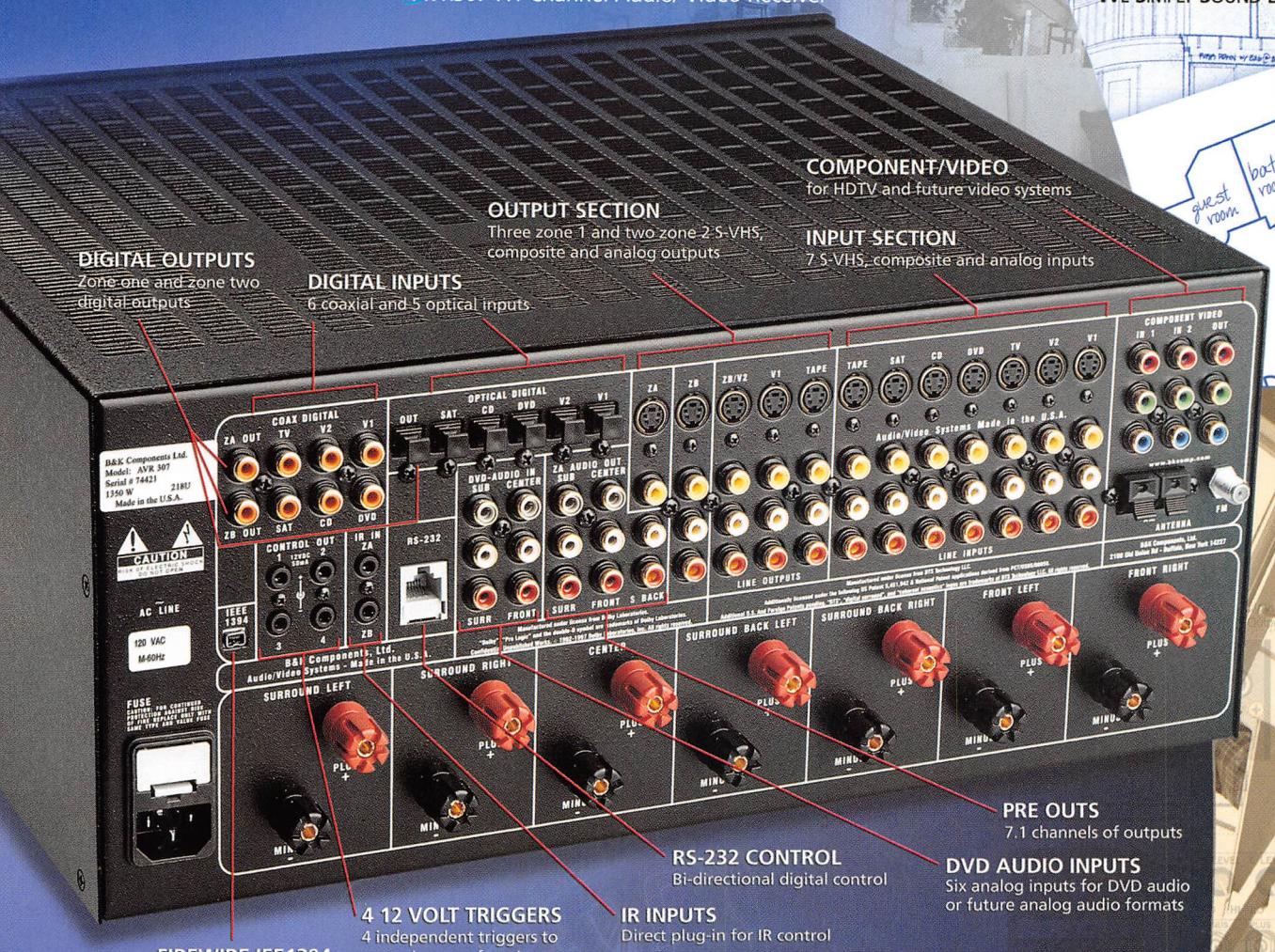


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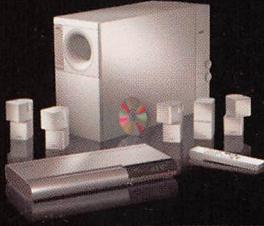
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